

American Artisan

Founded 1888

The Warm Air Heating and Sheet Metal Journal

Vol. 97, No. 23

CHICAGO, JUNE 15, 1929

\$2.00 Per Year



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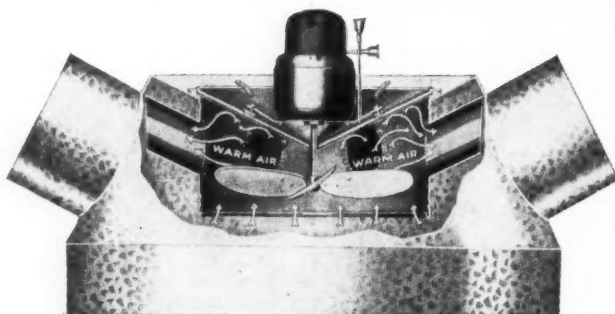
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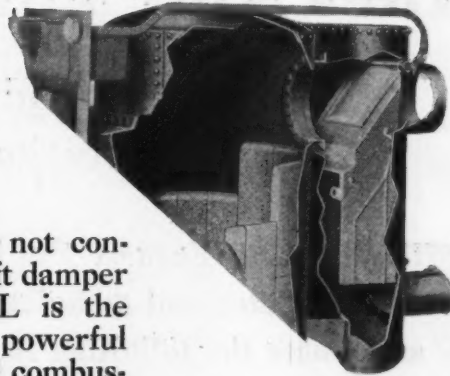
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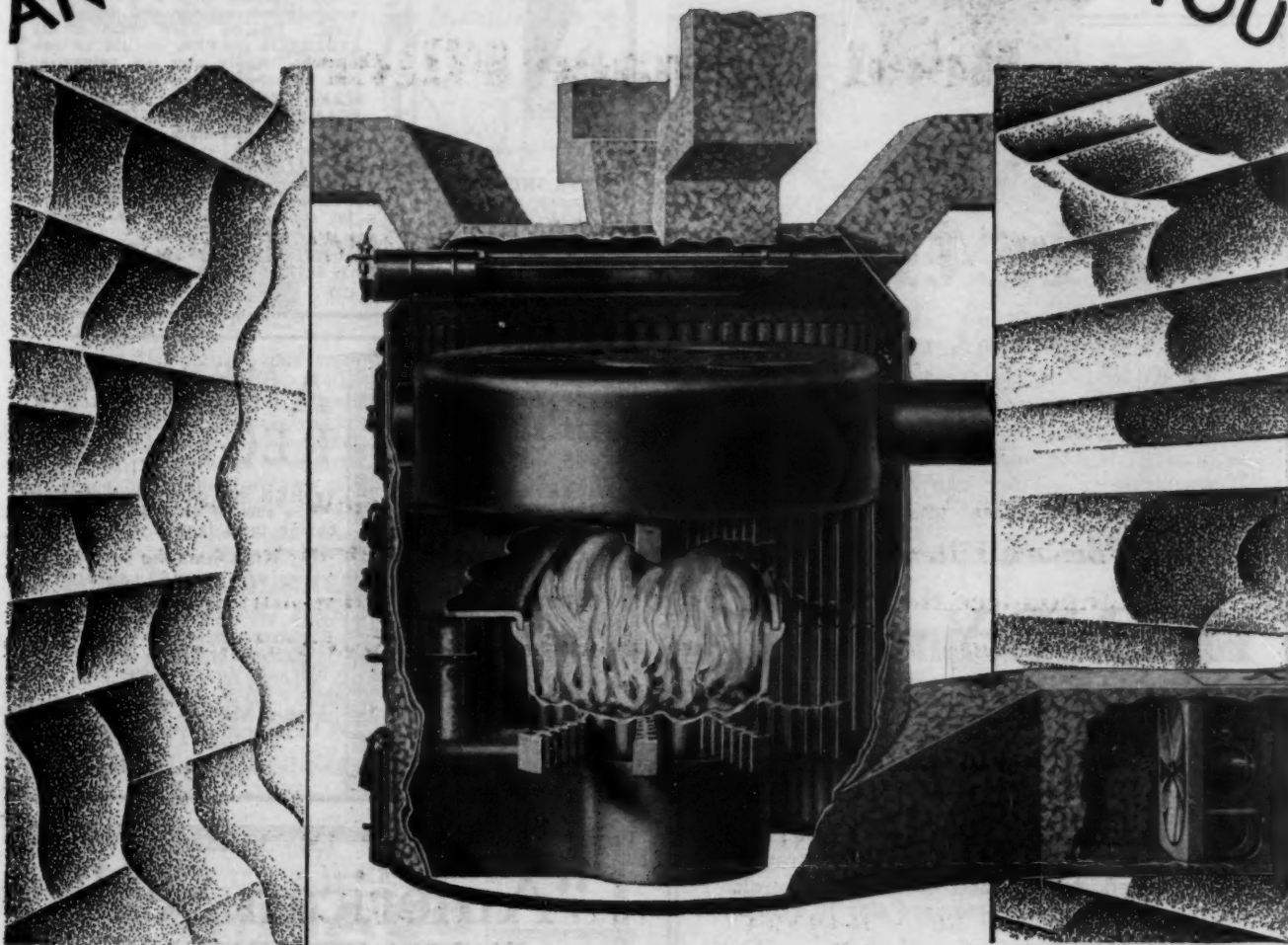
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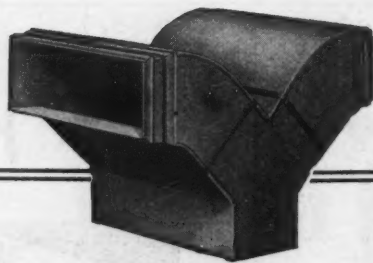
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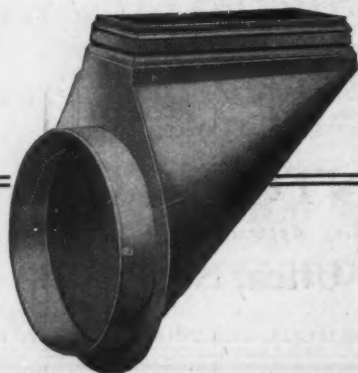
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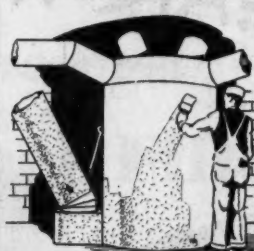
*Use it for a better job
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Write for our complete catalog which lists ALL warm air heating supplies.

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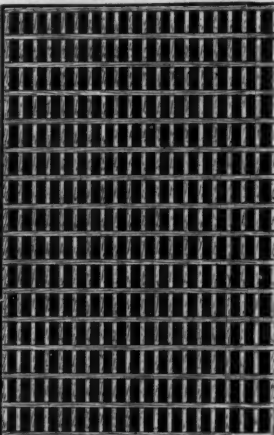
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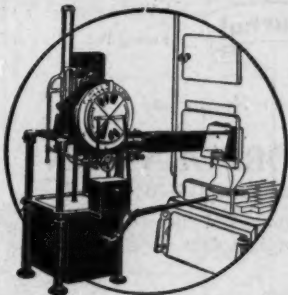
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Founded 1880

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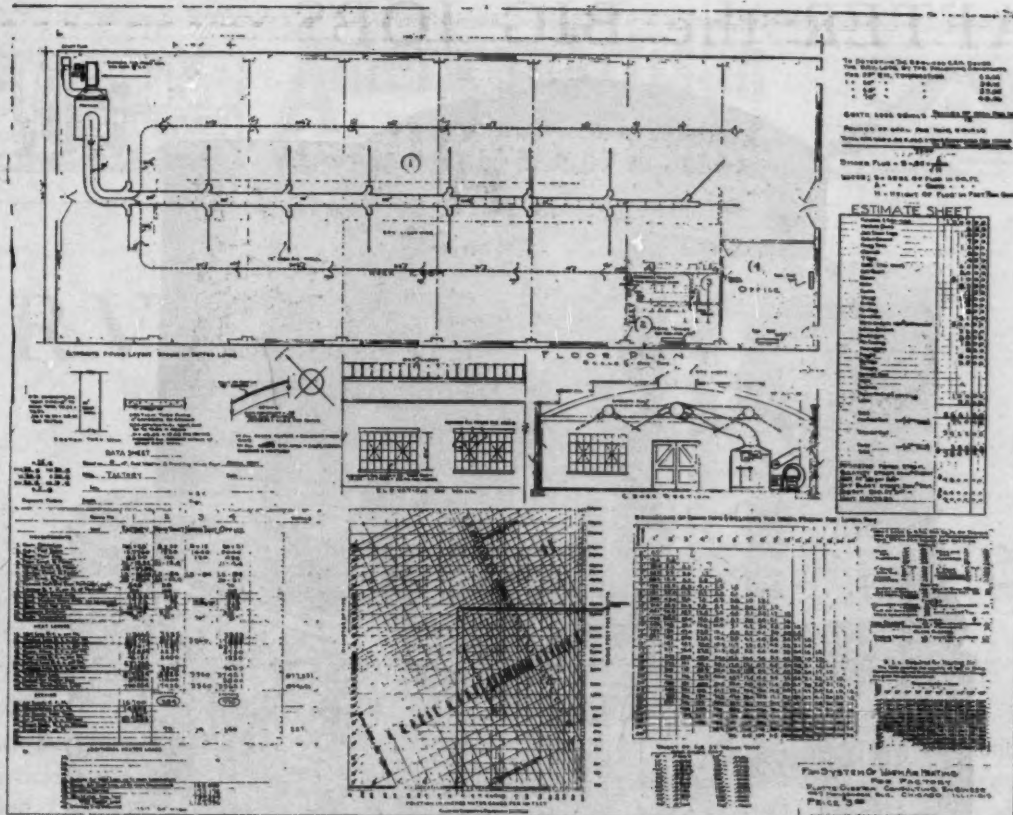
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NOW with this help you can handle the BIG heating contracts

IF you are a live progressive warm air heating and sheet metal contractor and if you have been passing up the Big Fan Blast Warm Air Heating jobs because you lacked the proper *engineering* information to tackle this type of job, *this service* is just what you have been waiting for.

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American Artisan

The Warm Air Heating and Sheet Metal Journal



Vol. 97

CHICAGO, JUNE 15, 1929

No. 23

SERVICE— And A WAY To Give IT

By GEORGE DUERR

ON PAGE 12 of AMERICAN ARTISAN for June 1, there appears an article by L. W. Millis, Secretary and Treasurer of the Security Stove & Manufacturing Company, Kansas City, Missouri, on the "Cost of Heating, Using Various Fuels."

This article prompts the suggestion that there seems to be no logical reason why the general public is not given an opportunity to select its coal on the basis of at least a proximate analysis. In other words the retail coal dealer should be compelled to show proof that the fuel he is marketing has a certain B.t.u. content, that it has a known percentage of volatile matter, and that the residue or ash product as determined by a proximate analysis is a certain amount.

This suggestion does not embody anything new, but merely shows the feasibility of extending a practice to the domestic heating field that for a long time has been made use of by large industrial plants who purchase their fuel on the basis of the B.t.u. content. Even the United States government itself refuses to accept coal purchased that does not measure up to a certain specification named in the order.

Similarly, in the gas industry manufacturing companies are compelled by law to meet certain mini-

mum standards of B.t.u. content. Material for clothing is purchased according to grade. The price of foods is adjusted according to their nutritive value as well as their

Many a warm air furnace installer has been looking for something new with which to brighten up his sales literature, some approach that would give him an entry to homes he has been unable to get to. Here's some information and suggestion that touch a man's heart through his pocket book. Show him where he can get better value for the money he spends and win his confidence.

Here's chance to show the home town trade that you know your stuff.

scarcity or abundance. Grains are graded.

We Can See the Bones in Meat

Therefore why shouldn't the public buy its coal along similar lines? An enterprising warm air furnace man could, through circular matter or house to house canvass, gain a hearing and the good will of home owners by suggesting to them that they make their retail coal man toe

the mark and by showing them how to go about finding out about the fuels that they purchase. In this way the warm air heating plant installer would not only gain the good will of his customers, but he in a large measure would place responsibility for much of the present dissatisfaction with heating systems on the shoulders of the coal industry where at least a portion of it belongs.

Should such a condition be brought about, the public would be able to fill its season's fuel requirements much more intelligently than now. Under present methods of marketing, as a home owner, I may pay a relatively high price for my fuel, but if the coal is of inferior B.t.u. content and high in ash product, the greater portion of the money I spend goes for freight and handling charges, instead of purchasing heat units. But unless I have a reliable source of information that will tell me what I am getting, within reasonable limits, I am entirely at the mercy of the coal dealer, who naturally is interested in selling me the kind of coal upon which he can make the largest profit.

What Analysis of Six Coals Showed

Say I'm living in Illinois. I buy a ton of anthracite coal at \$16.50

(Continued on Page 132)

JOBBER Versus MILLS

Why Not a Strictly Jobbers' Association?

By B. A. Epperson

MANY meetings have been held in the past years by jobbers of sheet steel and the mills that make sheets. The same old questions come up at every meeting. The jobbers claim that the mills sell small lots to their customers. The mills want the jobbers to stop small lot direct shipments.

The other old complaints are light weight, 29-gauge or lighter roofing, conductor pipe, and trough stock. Another is the idea of mills selling seconds.

So it seems that two points should settle the controversy.

Less Than Car Lots an Abomination

Point No. 1: Jobbers should request that the sheet steel manufacturers stop selling in less than carloads to the small buyer. A point might be stretched to include 1-carload shipments of sheets and fabricated products made by the mills. The mills should divorce themselves from all subsidiary jobbing connections owned by them.

Let me ask, why should a mill solicit business from the jobbers and at the same time sell small lots to the jobbers' customers? Why should the mills go after the 1-carload buyer of sheets and roofing, sometimes making combination carload shipments of sheets, roofing, pipe and trough and ridge roll and sometimes taking a carload of roofing, including a few hundred feet of ridge roll or other footage material? The southern states are large buyers of steel roofing (this business is usually light weight 29-gauge and should not be made into roofing at all by the mills. A small crossroad merchant will usually buy a carload of steel corrugated sheets. They will nearly always want a small amount of conductor pipe and trough or some ridge roll in the car-

Mr. Epperson was formerly a representative of the Berger Manufacturing Company, the Stark Rolling Mill Company, the United Alloy Steel Corporation, and was one of the promoters of the Dominion Sheet Metal Corporation, one of the first firms to make galvanized sheets in Canada. At the present time he is residing in Cincinnati, Ohio.

load shipment. Most mills will accommodate the buyer and include the small amount of footage material. If they sell the carload of roofing, why not at least let the jobber have the small amount of footage material?

Advocates a Strictly Jobbers' Association

In other words, why not have a strictly jobbers' association that would ask the mills to do things that are of invaluable interest to themselves? This for the purpose of not only bringing about what has been stated above but to complain effectively against the discontinuance of the 2% discount and the many other similar grievances as they arise.

Jobbers in a good many other lines are passing out and what was once large jobbers are closing their doors. But there are a good many reasons for the sheet metal jobbers remaining. They are an economic necessity; they are close to the trade; they can make quick shipments; they carry the stock (or should do so); they know the trade personally and carry the accounts sometimes for a long period. Then there are so many small buyers of sheets and they could not carry the many different sizes and gauges of sheet steel. Not many would have

the room in their shops to carry large amounts of sheets, but the jobber can stock them, and thus the small man has them immediately available. This saves him the necessity of large inventories and the consequent investment in the stock.

Most of the mills today are very large concerns and managed by capable men, and no doubt the jobbers' troubles with the mills would have proper and prompt consideration if put up to them by a strictly jobbers' association.

In plain words, a jobbers' association of sheet metal men for the jobbers' interest.

Direct Shipment Profits No One

Point No. 2: Mills to request the jobbers to stop the practice of mill shipments of less than carloads. This shipping of small direct lots is not strictly a mill proposition but has been forced on the manufacturers of sheets. It costs considerable to handle this small lot business and it is usually taken at a very small differential over the carload price.

The buyer also has to wait a long time for the shipment to be made from the mill and when he gets it the small lot is sometimes badly handled in transit. So the small difference in price and the time lost waiting for shipment does not mean much to the small buyer.

Again, it is hard to roll small lots of less than three tons, and the mills do not like to roll odd lots and sizes. Often in rolling these small lots they get sidetracked and sometimes a lesser or greater amount is rolled as the exact weight cannot always be gauged. The jobber usually takes this direct business to meet competition or because he does not have the stock. The margin of profit on direct shipments is usually small and, of course, it all makes some

tonnage for the mill, but little money for either the jobber or the mill.

A good many direct shipment orders are cancelled by the buyer in disgust after waiting a long time for shipment, so in the long run nobody is benefited by the direct

shipment habit.

The few troubles mentioned above are not all the grievances of the jobber and mills, but are about the oldest on the list and have been discussed at about every meeting since associations were formed. So why not write finis to them?

Warm Air Heating Association of New Zealand Formed

AN association known as the National Warm Air Heating Association of New Zealand has come into being, with B. H. Andrew, New Zealand Central Heating Company, President; M. W. Marriage, Newberry Walker, Ltd., Vice President; H. B. Alleway, New Zealand Central Heating Company, Secretary-Treasurer.

At the 1927 mid-year meeting of the National Warm Air Heating Association, held at Urbana, Illinois, a guest was present and introduced as the man who came 10,000 miles to attend the convention. That man was B. H. Andrew. Mr. Andrew spent considerable time in this country at that time studying heating and finally returned to New Zealand. And the formation of that association is largely due to the effort put forth by Mr. Andrew.

The objects of the association are summed up in an address made by Mr. Andrew at the time of calling the heating men of his country together for the purpose of forming the association as follows:

1. To promote a friendly relationship amongst those who are engaged in the industry.
2. To assist each other to improve our knowledge on all matters appertaining to heating and ventilation.
3. To advise and assist the manufacturer in the production of an article which will give the greatest efficiency to the general public.
4. To collaborate with the Architects', Builders' and Underwriters' Associations and others for the general improvement of heating installations.
5. To protect the interests of the

members of the Association by closely watching any proposed alterations to legislation freight rates, customs tariff, insurance rates, etc.

6. To enable the individual members to consolidate their wishes and to put them forward through official representatives, who will be able to speak on behalf of the whole industry.

7. To prepare a "Standard Code" to cover the standard of efficiency which must be maintained on all installations.

8. To endeavor to maintain a reasonable profit on all work done.

9. To endeavor to interest the public in the subject of Central Heating by means of advertising propaganda, etc.

10. To secure the latest information on the progress of Central Heating in the various countries, so that the members of this Association will be kept abreast of all the latest improvements in the various systems, and the results of the Scientific Research Laboratory in the U. S. A.

Reply to Mr. Skulte's Problem by Platte Overton, Consulting Engineer

The following is an answer to the request for information appearing on page 92 of the June 8 issue:

"The flue area for school building 24 ft. by 36 ft. will depend on the heat loss of the building, but if we conform to standard practice of 30 cubic foot of air per pupil, and the school seats 50 persons, we have 30 times 50 which equal 1500 C. F. M.

"As the velocity in the flue will be 300 ft. per minute approximately, we have 1500 divided by 300 or 5

square ft. or flue 30 ins. by 24 ins.

"The vent flue should be 80 per cent of this area or 4 square feet or flue 24 ins. by 24 ins. and same should be built up along side of smoke flue for the full height.

"The fresh air intake should be designed for a velocity of 300 ft. per minute or same size as warm air flue.

"Warm air inlet must be 30 per cent larger than flue if stamped steel grille is used.

U. S. Department of Labor Shows Increase in Employment for April

Employment in the United States increased .5 per cent in April over March, while payrolls increased .1 per cent, the bureau of labor statistics of the department of labor announced.

The report was based upon returns from 29,956 establishments, which in April had 4,931,645 employees, whose total earnings in a single week were \$136,664,271.

an April employment increase for the first time since 1921, the report showed. Anthracite and metal mining, public utilities and wholesale trade also showed increases, while bituminous coal mining, retail trade and hotel work reported decreased employment.

The bureau's weighted index of employment in manufacturing industries for April, 1929, is 99.1, as compared with 98.6 for March, 1929, and 93.3 for April, 1928; the index of payroll totals for April, 1929, is 104.6, as compared with 103.9 for March, 1929, and 93.8 for April, 1928. The monthly average for 1926 is 100.

Linde Air Product Opens New Oxygen Plant

A new Linde oxygen producing plant located at 1000 W. Washington Avenue, Oklahoma City, Oklahoma, commenced operations on May 17th.

F. K. Buckalew is superintendent of the new plant, and A. B. Curtis, whose headquarters are at Dallas, Texas, is district superintendent.

CONSTRUCTING PATTERN FOR INCLINED BRANCH IN AN OFFSET

By O. W. Kothe

HERE we have another drawing of the twisted pipe type by J. S. Redman. It is a problem that will tax your strongest powers of imagination. A trial on your drawing board will prove it.

To lay out this problem it is best to draw first the axis line of plan, although the side elevation is also a good point to start with, since with it you can obtain measurements for the plan. But first set off the centers, A-B, for the main pipe and then draw the minor branch tee as C-D. Describe the circles about the three centers and divide the sections of B and D in, say, 12 equal parts, as in this case.

Next erect lines into elevation for building that view up to conform with plan. Give the lower angles, B-D and G-A, the height desired and then measure the altitude of point B of elevation, which enables drawing the axis lines of elevation, as G-A-B and H-D-C, which will conform with plan. It will be observed that none of these three views will be true positions, and because of their peculiar angles all pipes are shown in a foreshortened position. It is, therefore, necessary to develop another view, shown by the true length diagram, in which we obtain true angles as well as true length of lines.

Projecting Horizontal Lines

To develop this view, project horizontal lines from each point, as G-A-C and B of front elevation, to cross a vertical line, as at I-4. With compass pick the plan line, D-C, and set as I-D' and draw line D'-C', which gives the true length and angle for the smaller prong. In bisecting this angle we establish the miter line, and in using a section described from 4 we divide it into equal spaces and erect lines to the miter line. From here we carry the lines back horizontally and with the aid of the erecting lines from sec-

tion D of plan we develop that ellipse about the point D of elevation. This can be done by starting with point 1 of each section and following them up until they intersect, as at 1', and in a similar way continue with the other points.

To conserve space, the main pipe is laid directly over the diagram of true lengths. This is done by picking the plan line, A-B, and setting it as I-A' of diagram. Now draw the angle, 3-A'-B'-4, and you have the true angle and length for this pipe in elevation and plan. By bisecting this angle, A'-B'-4, we establish the miter line, and by means of the half section of this diagram, as well as the section B of plan, we project lines and so develop that ellipse at B of front elevation. These ellipses place the elevation pipes in the correct position as we would see the angle in a finished view.

Now in order to obtain a face view where the branch pipe intersects the main pipe we must develop an oblique view, which can be taken through A-B-E of plan, where A-B of elevation gives the base length. So draw F'-A'' parallel to A-B of elevation and from A and B of elevation square out perpendicular lines. Then with dividers pick the offset, E-B, from plan and set it as F'-A''. (Note, through an oversight of the draftsman, the secondary offset line, F-C, was transferred as F'-B'' when it should have been E-B. This would have made the oblique view in a more vertical position.) Observe that the angle F'-B''-A'' of the oblique view is looking through the plan view A-B from position of point E. Now by carrying the point C from elevation into oblique view, as point L, and projecting line from D''-D we have line D''-L. The point M is established by squaring a line from D'' perpendicular to B''-A'', which

gives the length for establishing the true side elevation of branch.

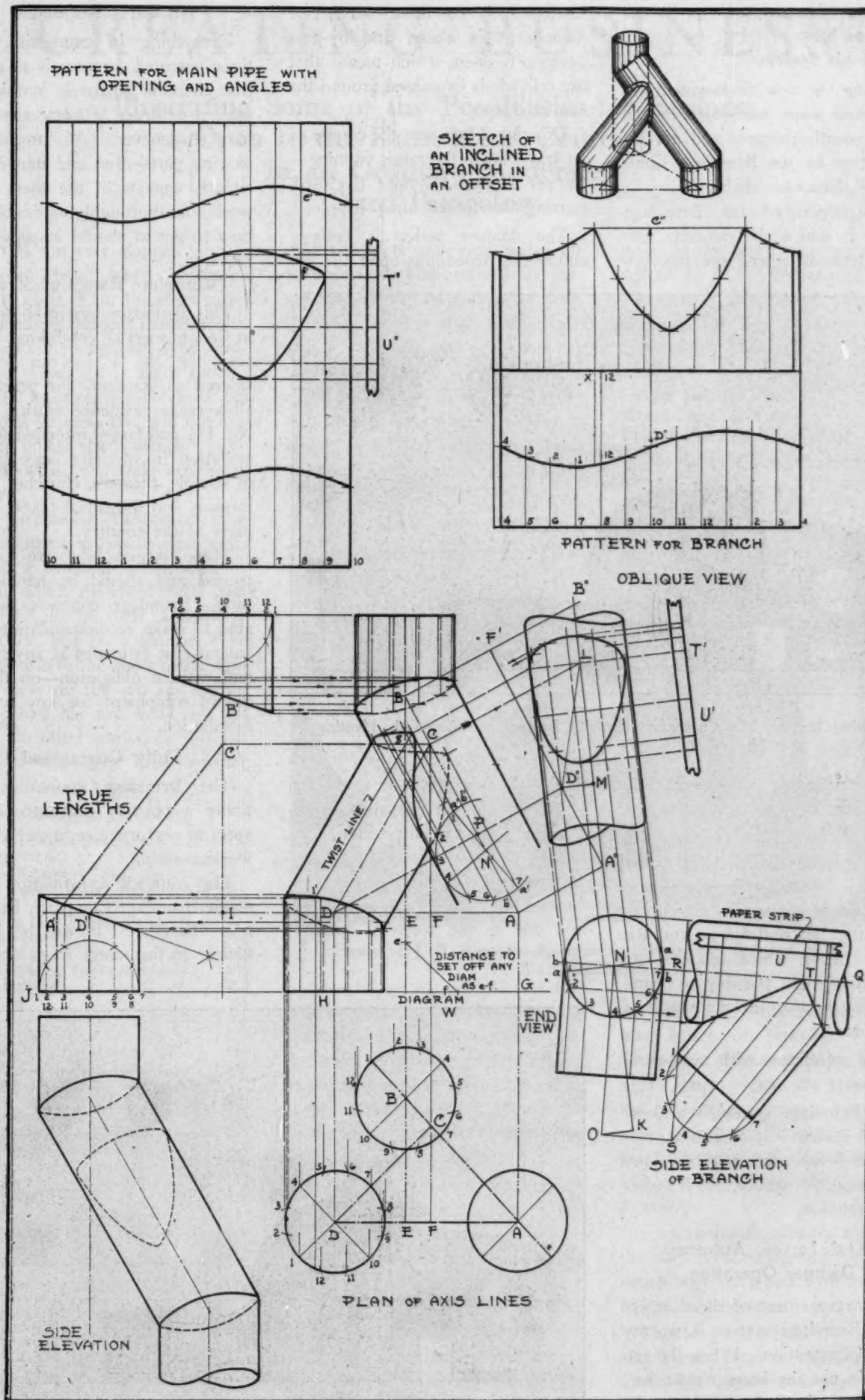
Extend the center line B''-A'' as A''-K, and at any place mark the point N, and describe the section for pipe. Now with dividers pick the distance D-P from front elevation and set this as N-K and from K square out a line at right angles to N-K. Then from point D'' of oblique view carry a parallel line to B''-K, which establishes point O, or the distance, D''-M, can be picked and set as K-O. Draw line N-O, and then construct the side elevation of branch, where R-S is equal to N-O, and at right angles to N-O square out the line N-Q and O-S. Then make R-T equal to D''-L of oblique view, which enables drawing the third line, S-T, and gives the true angle of branch.

How to Create Opening in Oblique View

After this the branch can be treated the same as any ordinary tee branch of similar diameters, thus giving the miter line and the development as shown. To place the opening in the oblique view we use the paper strip, U, and lift all points from side elevation and place it so the point T' is on a line and perpendicular to L of oblique view as shown by the strip, U'. Observe the axis, a-a over b-b, shown the turn of this pipe about section N, and so treating b-4-b as a section, we erect lines into oblique view and cross them from points in the paper strip, U'.

We can now transfer this section N from the end view in to the front elevation as N', and by carrying lines parallel to A-B of elevation and projecting them from points in the opening about L of diagonal view until they intersect in the miter line of elevation, which enables sketching in the lines as shown. Now the twist can be determined

(Continued on Page 132)



Brundage Company Develops New Forced Air System

Among the new developments in the forced warm air system is the outfit recently patented and now in production by the Brundage Company, Kalamazoo, Michigan.

Construction of the Brundage system is said to be radically different from all other types, incorpo-

Under such conditions master damper A is closed and by-pass damper B open, which means that the cold air is by-passed around the fan inlet pipe.

Drawing 2 indicates the course of air travel when the fan is running—damper A open, damper B closed, starting the forced air principle.

The damper action is entirely automatic, depending upon the ac-

All Parts Accessible

Everything in connection with these patented dampers is so simple that there is positively nothing to get out of order or cause any trouble whatsoever. All mechanical moving parts—fan and motor—are situated outside of the sheet metal work, and thoroughly accessible and easy to get at should inspection be required.

Complete Range of Sizes

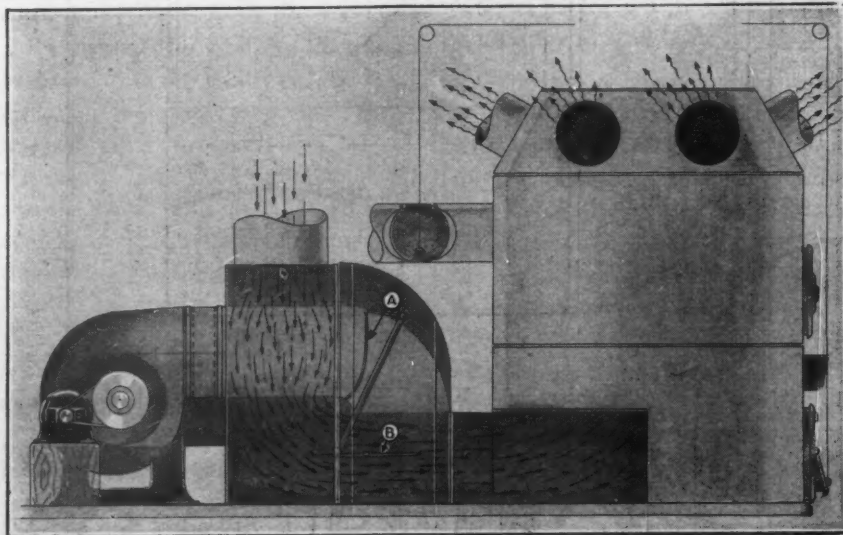
This Brundage system is offered in sizes to meet all conditions. However, the No. 1 size can be considered as standard for practically all average residence work. Sizes No. 1¼ and larger intended for installation in specially large homes, in schools, theaters, churches, auditoriums and industrial plants in all parts of the country.

These larger jobs are usually special and should be handled as such. Brundage engineers will be glad to make recommendations and submit cost estimates at any time—and without obligation—on the required equipment for any type of installation.

Fully Guaranteed

The Brundage system is sold under a positive guarantee in respect to performance, materials and workmanship.

For complete information write to the Brundage Company, Kalamazoo, Michigan. It will be immediately forthcoming.



Drawing No. 1. The Customary Gravity System of Warm Air Heating

rating outstanding improvements in the system.

The fan used is a centrifugal fan as distinguished from the propeller fan. It is of the low speed type and has a canvas connection placed between the fan outlet pipe and the damper casing which deadens any sound that might possibly be transmitted by metal to metal contacts of the system.

It is equipped with automatic dampers.

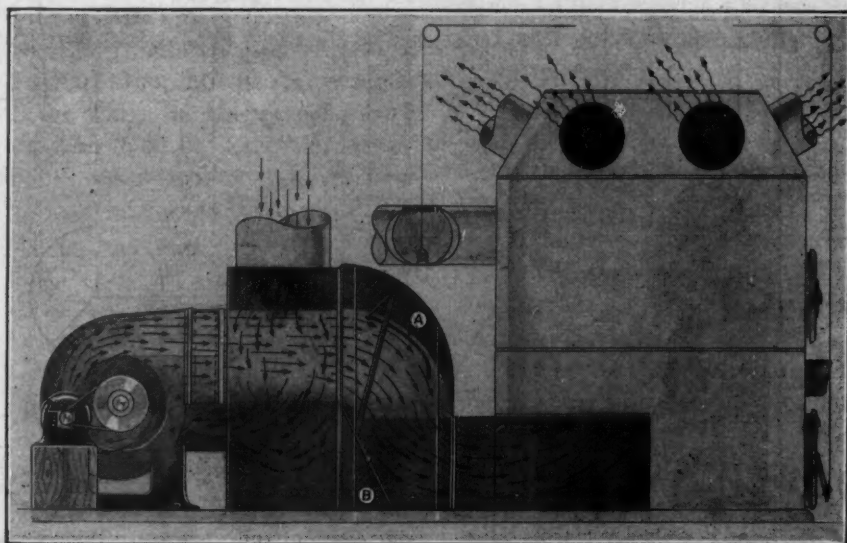
The Brundage system is a blow-through system. It creates a pressure. It is not a fire hazard in any way, shape, or manner, and it makes for cleanliness.

Details of Automatic Damper Operation

The arrangement of the dampers in the Brundage system is worthy of special attention. When the fan is not in use the home owner has, of course, the customary gravity system, as indicated in Drawing 1.

tion of the fan. As soon as the fan is started the air pressure forces damper A to an open position, closing B.

As soon as the fan is shut down, damper A returns to a closed position due to the force of gravity, opening damper B.



Drawing No. 2. Showing the System Operating with the Fan

CREATING BUSINESS

Illustrating Some of the Possibilities for Business Open to the Sheet Metal Contractor in an Ordinary Moderate Sized Bungalow

HAVE you ever stopped to consider how much potential business there is for the sheet metal and warm air heating contractor in an ordinary bungalow type residence of from six to eight rooms? Potential business is mentioned, because it is business that will not materialize unless the contractor is on the job when materials are being specified.

For purposes of illustration let us compare itemized construction costs first on a dwelling constructed of brick to which the sheet metal contractor did not get until called in by the owner, and on a similar type dwelling where the sheet metal contractor was on the job and consequently had his say early in the game. In other words, on this job the sheet metal man was an order taker, instead of a salesman.

Cost in Detail

Brick—for House and Garage (including labor)	\$1,700
Cement—Basement and Garage Floor and Walk (including labor)	650
Decorating and Interior Paint (including labor)	785
Electric Lighting Fixtures	150
Electric Wiring (including labor)	265
Gas Ranges (4)	220
Insulation	85
Lumber and Millwork	1,409
Oak Flooring	228
Paint—Exterior (including labor)	100
Plastering (including labor)	500
Plumbing—Heating (including labor)	2,000
Refrigerators—Electric	480
Roofing—Asphalt Shingles	235
Sheet Metal	68
Sodding Lawn	50
Steel Casements—Basement	42
Stone Trim	55
Tile—Mosaic and Quarry	110
Carpenter Labor	1,800
Total	\$10,932

The accompanying illustration is that of a dwelling having a green metal tile roof, requiring 47 squares of roofing, metal gutters, zinc downspouts, a 20-inch metal ventilator on the roof, a 26-inch warm air furnace with a fan, with two 20-inch

cold air ducts and nine warm air registers. In addition a 2-car garage was erected of galvanized iron. On this job the sheet metal man was a salesman and exercised his ability to advise.

A tabulation of the costs of materials and labor alone on this job looked something like this:

Metal tile roof	\$ 793.00
Gutters, downspouts and ventilator	56.00
Warm air furnace, pipes and registers	235.00
Two-car garage (erected)	348.50

Total labor and materials. \$1,432.50



Home of J. C. Neuman, Springfield, Illinois, and Amount of Sheet Metal Business on It

Now to this figure add the amount of overhead and profit and compare it with the job mentioned in the first part of the article. The sheet metal man's effort to push his products in this case netted him some excellent results.

It would seem that one mighty good reason why some sheet metal and warm air heating men are in the plight complained of today is that those men are not aggressive enough in their sales efforts. Either they don't know how to go about introducing better sales methods or they just haven't the ambition to get out and sell.

For the figures on the dwelling

given in the latter case we are indebted to J. C. Neuman of J. C. Neuman & Son, sheet metal contractors, 304 East Monroe Street, Springfield, Illinois.

Grand Rapids Sheet Metal Local Initiates Behler-Young's New Office

The Grand Rapids Sheet Metal and Heating Engineers were guests of the Behler-Young Company at their new office and warehouse for their May meeting. President Ike Lammers called the meeting to or-

der and quickly disposed of the regular order of business. C. P. Thompson, National Paint & Varnish Company, was the speaker of the evening and gave a very complete address on the proper way of painting metals of all kinds. His talk was very interesting and instructive.

Several questions were asked by the members concerning problems which they have met with in painting galvanized iron.

Following this talk the meeting was turned into a social session. Coffee and sandwiches were served late in the evening which concluded the meeting.

New Sheet Metal Ventilator Placed on Market

Carrying out the large scale production, low per unit cost of production idea that is now so prevalent in American industry, the Folsom Metal Products Company, 5111 West North Avenue, Chicago, Illinois, has introduced the Super "K. D." ventilator to the sheet metal world.

As shown in the accompanying illustration, the ventilator is so constructed that it can be packed completely knocked down for parcel post shipping, thus reducing handling charges to the minimum and avoiding the possibility of damage.

This ventilator is suitable for installation on single pitched, double pitched and four pitched roofs. It is made in two sizes known as the junior and senior. The junior size over all dimensions are $23\frac{1}{2} \times 23\frac{1}{2} \times 25$ inches, while the packed dimension of this size are $5 \times 16 \times 24$ inches.

The overall dimensions of the

senior size $31 \times 31 \times 32$ inches; packed size $5 \times 21\frac{1}{4} \times 31$ inches.

Prices and installation instructions can be had from the company direct, and the sheet metal contractor who does ventilating work should avail himself of this privilege at once.

Minneapolis-Honeywell Has Big Expansion Program Under Way

H. W. Sweatt, Vice President and General Manager of Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., announces an expansion program starting immediately, involving a total expenditure in the neighborhood of \$300,000. The company has purchased additional frontage on Fourth Avenue, 27th Street and Fifth Avenue, which with their present holdings, practically gives them the entire block, bounded by Fourth Avenue, 27th Street, Fifth Avenue and 28th Street, providing for additional room for expansion needs.

Ground has been broken and work is now under way on a new wing adding 50,000 square feet to the plant, which will run northward 120 feet on Fourth Avenue from the present Minneapolis-Honeywell tower. The addition will be six stories above basement symmetrical in appearance with that portion of the building built in 1927.

The cost of the new addition involves an expenditure of \$150,000, and in this will be placed \$75,000 worth of new equipment. J. V. Vanderbilt is the architect and Pike & Cook have the general contract

for erection.

Mr. Sweatt states that the "growth of this business makes it appear that a heat regulator is rapidly becoming a staple, required in every home, instead of a luxury, that only a few could possess. Forty-four years ago all the plant needed to make heat regulators was a little one-story frame house. Since that time the company has been forced to expand its quarters twelve times. The present plant is operating at full capacity, working twenty-four hours a day, night shift having been added on the first of April. The Company's Minneapolis payroll at the present time is running on a basis of \$1,444,428.00 yearly, an increase of \$556,134.00 over 1928."

In addition to the Minneapolis factory, the Minneapolis-Honeywell Regulator Company is operating at full capacity its three plants at Wabash, Indiana. These plants are devoted exclusively to the manufacture of motor driven devices and plant additions are likewise planned at Wabash. The Minneapolis-Honeywell Regulator Company is at the present time employing approximately 1,700 people, 800 of which are in Minneapolis, 250 at Wabash and over 600 in its various branches located throughout the country.

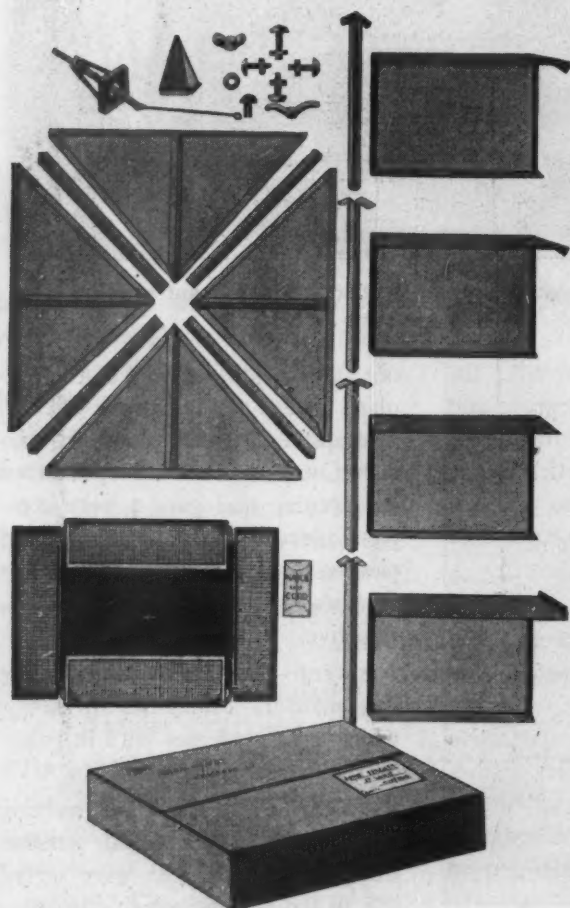
Let Us Put Pleasant Things In Our Bank of Life

Life has three periods. The prospective youth, the Now of middle age, and the Then of old age.

The man who skins others, turns sharp corners, jostles the weak and is suspicious during the Now period has little satisfaction in looking backward in his old age.

One of the great pleasures of our latter days will be retrospection. Hence the importance of doing and acting things today that will give us pleasure to look back

Yesterday is gone. We can't change it. But today is here. Let's improve it and put pleasant things in our bank of life that we may draw upon in after years.



Showing the Ventilator

Only Three Years in Business

Walter

Moves
from
side street



Sargent

to Main
street—
“and how”

By J. F. JOHNSON

WALTER SARGENT of Pe-kin, Illinois, moved into his new home, shown on this page, April 1st, after having been in business but three years.

His former place of business was on a side street, but he had his eye on a better location soon after he got under way in his first establishment.

Walter had worked at the trade for twenty-eight years and had been in charge of a sheet metal and warm air heating business for some years before venturing in business for himself.

With this thorough knowledge of the trade and his managing experience he has built up in three short years a business that has enabled him to erect a new building and equip a new shop and office which conforms to his ideas of what a modern sheet metal and

warm air heating business should be.

“Folks don’t live in one town all their lives any more,” Sargent says. “New people are constantly moving in, and you have to have your place of business where people will pass by it and be attracted by a display. It used to be that everybody in town knew where you were down the

alley, but nowadays they won’t go after you even if they do know where to find you.”

That’s the reason for his large window, which is washed at least once a week. It’s also the reason for the row of pictures to be seen in the photograph. These photographs are of buildings on which Sargent did the roofing, and he states that few folks fail to stop and look at the pictures. Many notice the homes of their neighbors or friends and come in to inquire regarding the roofing.

The store front measures 25 feet in width, the shop being 25 by 86, with a 12½-foot ceiling.

Walter is a merchandiser—notice the name above the window—it is of glass, the lettering being green with a white field. Lights placed behind the name illuminate the sign, the window and showroom.



SARGENT says that he turned his showroom lights out one night and the next day several people told him about it.

SARGENT says that when he got off a side street and onto the main street he greatly increased his business.



With this snappy office and
inviting show room—

Sargent Sells

Quality and

Sargent keeps the place lighted every night and he knows it pays because he has watched passers-by stop to look at his displays.

His showroom and office is inviting, clean and attractive. Comfortable chairs are provided for prospective customers and the place has a business-like appearance. The walls are of glazed white brick, which is easy to keep clean. The shop is shut off from the office and showroom and is arranged for the efficient handling of work. It's well lighted and ventilated. A fan blast warm air heating system, using a horizontal furnace, heats the entire building.

This heating system, which is

thermostatically controlled, is seen in the photograph of the shop. In the picture of the office the overhead register can be seen above the shop entrance.

This installation, which heats the flat above, too, also acts as a sales promoter and Sargent never fails to show it to prospective warm air heating customers.

"When it comes to the question of heating the larger buildings—schools, churches, etc.—I bring the interested parties to my shop and show them this actual installation," he says.

Walter says that he has noticed that this new showroom and office attracts a better class of trade.

He changes his window displays often and the roomy space allows him to show large sheet metal work which ordinarily is hard to display.

When Sargent was ready to open his new shop, he inserted in the local newspaper the advertisement shown in this article. He arranged to have a representative of the Eternit Shingle Company of Philadelphia put on a demonstration. The announcement of this demonstration and the advertising of souvenirs brought a large gathering

This three column
newspaper advertisement
the folks in to look
new establishment

Announ
SAT. A
O P E N
O
SARGE
New Sheet M
619 COURT S
Shingle demonstration
sentative of Eternit Shing
SOUVENIRS for
BE SURE TO ATTEND THIS OPEN
THE BEST EQUIPPED AND MOST M
SHOPS IN THE COUNTRY.

Do You K
Your Furna
"WEARING
During the Su

Unless the soot
from the castings
pipe it becomes da
acid is formed whic
the metal.

This can be thor
moved with our elec

PHONE 7

Walter A. S

lumn by seven inch
advertisement brought
look over Sargent's
ment.

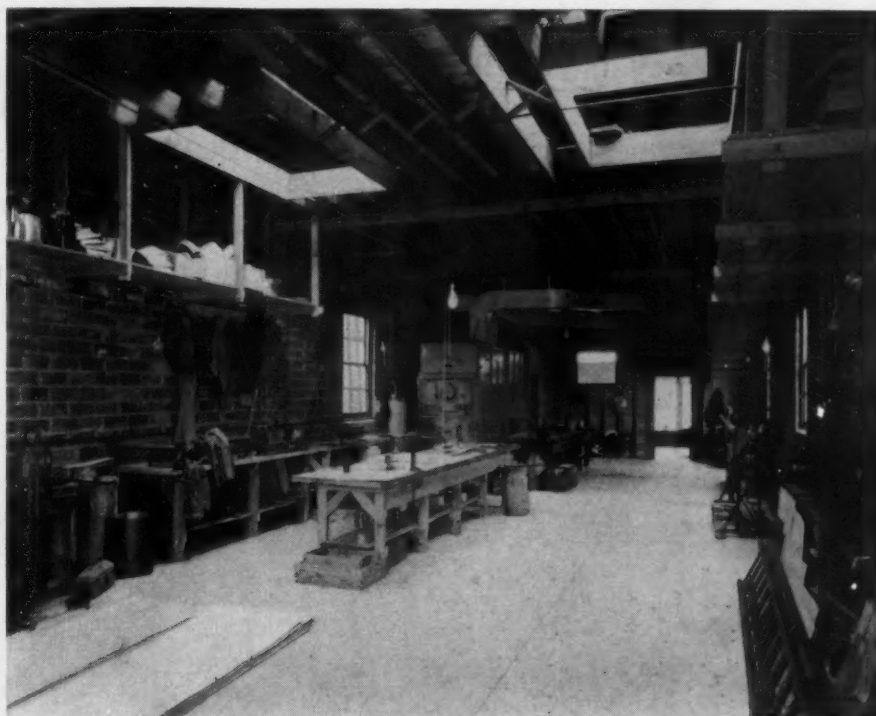
Announcement
AT. APRIL 6
EVENING
O
SARGENT'S

Sheet Metal Shop
FOURTH STREET

stration by special repre-
nit Shingle Company.

S for LADIES

THIS EVENING AND SEE ONE OF
AND MOST MODERN SHEET METAL
Y.



And this well equipped and
efficient working shop.

Service ♦ ♦ ♦

to the opening.

"The souvenirs consisted of a set of three hot pads for the table. They cost 33 cents apiece wholesale, but I believe in giving something worthwhile as a souvenir, something that will be used and mentioned to other folks," Sargent says, and this statement shows some more of his sound merchandising ideas.

Children, of course, came also, but Sargent knows it pays to have them as friends, too, so he gave spinning tops.

Walter is a firm believer

in advertising. Notice his furnace cleaning advertisement which he is using now to get into basements, keep his men busy and to dig up live prospects for repair and new work. He also circularizes regularly through the mail.

"Doing good warm air heating installations is our best advertising," Sargent says. "Ninety per cent of the work comes to us upon recommendation of satisfied users, and I sell my customers on heating comfort, performance, and on Standard Code installations.

"We make it a point to sell our service, and not a low price, and to live up to our agreements. We find that in doing so it is easier to find

customers ready to meet their obligations."

Walter keeps a good set of books; he knows where and how the money goes out and how it comes in. At the end of the year he knows what it costs him to do business and exactly how much money he has made.

However, his wife is going to get the credit for that, but we'll have to give Walter credit for having married an efficient bookkeeper as well as an excellent housewife.

Sargent employs from three to five men all the time and one of these men has worked under his direction for over seventeen years and another for eleven years.

(Continued on Page 131)

You Know
r Furnace Is
BRING OUT"
g the Summer?

the soot is removed
castings and smoke
comes damp and an
armed which eats into

be thoroughly re-
h our electric cleaner.
PHONE 732

r A. Sargent

Why Not Combine GRAVITY-FORCED AIR Plant?

Gravity for Normal and Forced Air for Peak Loads

By J. C. MILES

J. C. Miles, as almost everyone in the warm air heating industry knows by this time, is Vice President of the Warm Air Furnace Fan Company, Cleveland, Ohio.

Mr. Miles is one of the most ardent advocates of the forced air principle of warm air heating.

In this article Mr. Miles shows what the ratio of pipe size is between the gravity system and the fan system.

THE FAN tests made at the University of Illinois for the association have brought out some illuminating facts. A pertinent point is the small amount of actual resistance in a properly installed gravity warm air system, when measured in inches on a water gauge.

The fact remains, however, that if the motive head is not equal or in excess of the resistance, regardless of how small the resistance is, the circulation will be retarded and the heating capacity reduced. Wind pressure and unusual elbows, long turns, etc., have played practically no part as yet in this investigation, but must be reckoned with for practical or commercial application.

How Power May Be Predetermined

With forced circulation, power may be predetermined in anticipation of excess resistance such as extra angles, long runs and outside wind velocities, but by attaching a fan to the present gravity system it was found by test that the system was out of balance in one or the other methods. This may or may not be serious, depending on the point of view.

It may be admitted that the fan will unbalance a good gravity system, but there is a question of the seriousness of this, in view of the many other advantages shown by the test or again in view of many obstacles put in the way of installing a good gravity system in actual commercial practice.

If a fan will increase the efficiency of the warm air furnace or increase its capacity to put the heat into the air, as was shown by these tests, it would seem wise to try to adopt the gravity system to the fan system.

It is believed by some engineers that this can be done without sacrifice to either system.

Forced Air for Peak and Gravity for Normal Loads

One suggestion is what is termed as a "Combination System," embodying both gravity and forced circulation. That is to say, the system be designed as a forced circulation system for zero or peak loads and the same system under gravity circulation for normal loads.

This combination may be worked out to suit the temperature variation in the whole heating season by adopting a 50 to 70 ratio. A properly designed fan system for 70 degrees temperature difference in combination will adapt itself to the gravity performance for a 50 degrees temperature difference.

The combination principle permits the development of power in anticipation of resistance and allows a leeway for adjustment. If the pipe sizes are reduced, such reduction is compensated for by increased temperature, which, in turn, effects a higher motive head and better gravity circulation during the normal heating period.

As an example: We may have a first floor room with a heat loss of 7,000 B.t.u. per hour when the tem-

perature difference is 70 degrees F. Then if we design a fan system (with a pipe velocity of 300 feet per minute and a temperature loss of 70 degrees F.), each square inch of pipe will have a heating capacity of 166 B.t.u. Hence the pipe area equals 7,000 divided by 166 equals 42 inches.

If the high load is 7,000 B.t.u. and the ratio is 50 to 70, the low load would be 5/7 of 7,000 or 5,000 B.t.u.

The Standard Code capacity of 1 square inch of first floor pipe area is 113 B.t.u.; then the pipe area (113 divided by 5,000) equals 44 inches plus.

An example for a second floor room of the same size:

Pipe capacity for fan system with 400 feet velocity is 221 B.t.u. per square inch, hence would be 7,000 divided by 221 equals 31 plus.

Using the Standard Code second floor pipe capacity of 166 and the 50 to 70 ratio, we have 5,000 divided by 166 equals 30 plus.

Comparing Gravity and Fan Pipe Areas

It will, therefore, be seen the pipe required for 70 degrees temperature difference with a fan is approximately the same size for a Standard Code gravity pipe of 50 degrees F. temperature difference for both first and second floors.

Viewing the variation of temperatures, we observe that the mean temperature for a 70 degree low temperature difference is plus 40 degrees F or 30 degrees temperature difference 50 per cent of the heating season. This heating requirement would be but 3,000 B.t.u. in the above example or (3,000 divided by 113 equals) 26 square inches plus as against 44 square inches plus for first floor (or 3,000

divided by 166 equals) 18 square inches plus as against 30 square inches plus for second floor. Hence it will be seen that while the temperature loss would be 110 degrees F. for 50 degrees temperature difference, a greater portion of the time the temperature loss would be approximately 70 degrees F. or more nearly the same as the fan system temperature loss.

One point where the present gravity system would be improved is in raising the air temperature for the normal heating period.

The Standard Code temperature loss is calculated for 110 degrees for low outside temperatures which is approximately 47 degrees for normal temperature. This low temperature difference greatly reduces the motive head and retards the circulation, whereas the combination system raises the air temperature and increases the motive head.

To say the least, this combination system offers possibilities and it is to be hoped that the Research Committee of the Association can find time to have the research staff get some data on the subject.

Walter Sargent

(Concluded from Page 129)

"Good men are important to any business and men you can rely upon are the kind that help build your business," Sargent says.

Sargent reads his trade papers, uses the ideas other men find successful, belongs to the Illinois Sheet Metal Contractors' Association, and attends every convention. He has attended these state conventions for many years, as well as many of the national conventions.

He has been to Urbana to see the Research Residence of the National Warm Air Heating Association, and he says that it impressed him a great deal and that the meetings he attends give him many good ideas which he tries to use.

In fact, it was while he was attending the Illinois Sheet Metal Contractors' Convention at Peoria this year that he told me about this very up-to-date shop of his.

Majestic Company Holds Dealer Conference at Huntington

THE ANNUAL Home Coming of dealers of the Majestic Company, Huntington, Indiana, was held in Huntington June 11 and 12, 1929, with about 75 furnace dealers and salesmen assembled to view the new products of the company and to absorb some of the enthusiasm of the head of the Majestic Company, J. M. Triggs, who is also president of the National Warm Air Heating Association.

Jack Stowell of Aurora, Illinois, and J. C. Miles of the Warm Air Furnace Fan Company, Cleveland, Ohio, were headlines on the program. Tuesday morning was spent in registration, getting located, and in getting acquainted.

Luncheon was served at the Hotel LaFontaine. The display room of the company was viewed immediately after lunch and the remainder of the day was given over to recreation—golf and horseshoe pitching. Dinner, bridge and smoker get-together party were held in the country club of Huntington.

Final sessions of the two-day "homecoming" were held Wednesday morning and afternoon, including morning and afternoon conferences at the downtown display room on East Franklin Street.

In the morning session the dealers were entertained by an address by Jack Stowell. Luncheon was served at the Hotel LaFontaine. Following the luncheon a group picture of the visiting delegates was taken in front of the Hotel LaFontaine.

In the afternoon a dealers' round table discussion was held at the downtown display room with the theme for discussion being "My Problems and Yours." A sight-seeing tour of the city was taken after the afternoon business session.

The program was concluded with a banquet at the Hotel LaFontaine at 6:30 o'clock, featured by music, stunts and talks. The final event of the session was a swimming party

conducted at the Egyptian pool at the Hotel LaFontaine.

Officials in charge stated that the downtown display room used for the convention remained open for public inspection Thursday, Friday and Saturday.

Tuesday evening's dinner at the old country club was enlivened by an alarm that an automobile had slipped off the pavement and was upside down in the old canal bed. Members of the party rushed out into the rain, found the automobile, righted it, and discovered two "dummies" in it, bearing Majestic markers.

The wet "heroes" were given the laugh when they returned to the clubhouse.

Wagner Electric Develops Ultra-Quiet Motor

Of interest to fan manufacturers for warm air furnaces is the fact that the Wagner Electric Corporation, St. Louis, has placed on the market a new electric motor, developed especially for use where ultra-quiet performance is extremely essential.

The motor proper is insulated from the supporting cradle-shaped base by means of rubber bushings. It is claimed that the use of rubber absorbs whatever vibration there may be in the running of the motor without affecting rigidity or shaft alignment.

The motor is of the brush-lifting type, the brushes being lifted off the commutator as soon as rotor attains operating speed. The motor proper, it is stated, has undergone other alterations to effect quietness of operation.

In addition to equipping governor weights with rubber bumpers, as was done previously, the rocker arm has been redesigned to eliminate as much as possible the brush noise during starting and stopping of the outfit.

For full information write to the Wagner Electric Company.

INCLINED BRANCH

(Concluded from Page 122)

by starting with the high point as, g of elevation, and carrying a line parallel to the central axis line into plan as g-1' drops in plan alongside of point 12. This then must be the relation between point 12 in pattern for angle and the high point in the tee pattern.

So that in developing the pattern for the intersecting branch we set off the girth and develop the lower pattern for angle the same as for any ordinary elbow, only making the length of the tee part equal to C'-D' of true length diagram. From the plan we see the branch axis line C-D will have the heel at 1 and the throat at 7, and that the twist line g-1' of elevation leads down to between 1 and 12 of plan in section D. This, therefore, lets us place the X line over from the heel of branch as shown. Observe, this heel of the branch is the throat of the lower angle, but it is the heel of the middle piece we are after and that lies in the throat in the lower angle. After the X line is established the rest of the branch pipe can be developed the same as any ordinary tee, picking the length of lines from the side elevation position. Edges for assembling must be allowed extra.

Finding True Lengths

Now to develop the pattern for the main pipe, we set out the patterns as an ordinary offset, using the true lengths of the axis line A'-B' for the middle section. When it is desired to place the opening in the correct position we must first find the true length of the distance, e'-f' of pattern. This is shown in diagram W, where the rise of the diagram is made equal to B-g of elevation and the base line of W is made equal to B-8 of plan on line B-E. This enables drawing the slant line e-f which is the true length, and is set in pattern as e'-f'. Then by transferring the paper strip U in the position U"—so that T" is on a line with f', lines are projected into pattern which establishes the intersections for tracing the outline of opening.

When this is done a model can be cut out and the pipe assembled and the workman will have enough work on this problem to get it properly fixed in mind, so that the better part of a week of evenings is spent in contemplations. Sometimes it is necessary to make ordinary angles and make a joint in the pipe, so the angles can be twisted to the positions desired. In fact this is the way most workmen arrive at double twisted pipe work in daily work. But to use models as we have explained, a person can then look at his problem more correctly, which helps considerable in locating lines in a drawing.

GIVING SERVICE

(Concluded from Page 119)

per ton. In making this purchase I think I've done the best I can. I quite naturally reason that because the coal is highest in price it must be the best on the market.

But according to Table 15 of the University of Illinois Bulletin No. 189, a proximate analysis of six different coals shows that I would have done better to have bought Pochahontas coal at \$9.50 per ton. By so doing I would have received greater heating value, the actual money expenditure would have been less, the wear and tear on my back would have been materially decreased because of less ash product to remove, and my tonnage for the season's firing would have been considerably reduced. If we buy meat in the meat market, we can see by observation whether the meat is mostly bone, but the "bones" in the fuel we buy to burn are not so readily discernable.

But how can the "bone" in the coal be revealed? That question is quite natural. Perhaps very few warm air furnace installers and a fewer number of the public know anything about it, but the Department of the Interior, Bureau of Mines of the United States, under the direction of Joseph A. Holmes, made between 1904 and 1910, a most comprehensive and exhaustive analysis of coals mined in prac-

tically every county in the United States. This work tells the kind of coal, its condition, the volatile matter contained in it, the fixed carbon, the ash, the number of heat calories, the British thermal units, the sulphur content and the percentage of its several properties. This information is incorporated in Bulletin No. 22 of the department.

Packs a Mighty Wallop for Price Competition

With such aid at his command and the comparative prices charged by coal retailers in any given locality, the warm air furnace installer could render a genuine service to his customers of inestimable value. Then with the cooperation of the furnace manufacturers to tell him exactly what type of coal is best suited for any given furnace, he would be in a still better position to advise his customers.

It is about time that the coal retailers were made to shoulder some of their own responsibilities, and the furnace installer can make them do it if he but will. In addition, think of the possibility of winning confidence of old and new customers alike. With such ammunition at your command, there ought to be no chance for price competition even to enter.

Fifty Years a Buyer of Iron and Steel

On May 15 A. W. Glessner, president of the Excelsior Steel Furnace Co., Chicago, celebrated his fiftieth anniversary as a buyer of iron and steel. On that date in 1879 he made his first purchase, placing an order for sheet iron with Joseph T. Ryerson & Son, then located at South Water and Franklin Streets, Chicago.

During the half century that has elapsed since that time Mr. Glessner has been a constant buyer of sheets and tin plate, developing into one of the largest purchasers of light sheets in Chicago and the West, and the Ryerson company has become a very important factor in jobber of iron and steel products in the country.

Northwest Furnace Builders to Meet at Bellingham June 28



Photo of 40 warm air furnace manufacturers and dealers handling their products who convened at a recent meeting of Northwest Furnace Builders in Salem, Oregon. All of them are in business in various Washington and Oregon communities.

J. M. LAUBE & SON, INC., Bellingham, Washington, will be hosts at the forthcoming meeting of the Northwest Furnace Builders, to be at Mount Baker Lodge Friday, June 28. W. H. Carsten of Seattle, president of the furnace manufacturers' group and of Majestic Furnace & Manufacturing company, announced that the invitation of F. E. Laube to have the meeting at the lodge had been accepted.

The Laube company, manufacturers of Mount Baker wood-burning furnaces and sheet metal work, will be host at the "farthest-north" meeting of Northwest Furnace Builders. Previous meetings have been in various cities in West central and southwestern Washington and northwestern and west central Oregon.

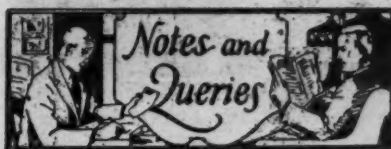
Members of Northwest Furnace Builders have factories in Everett, Tacoma, Seattle, Portland, Salem, Milwaukee and Silverton. It is expected that representatives of more than a dozen of the leading warm air furnace manufacturers of Washington and Oregon will attend the Bellingham meeting.

Those expected to attend are F. E. Clark of Clark Heating company, Milwaukie, Ore.; L. C. and A. R. Eastman of Eastman Bros., Silverton, Oregon; George F. Gehri of Gabriel Tubular Furnace Company, Tacoma; A. L. Lang of F. S. Lang Manufacturing company, Seattle.

W. H. Carsten of Majestic Furnace & Manufacturing company,

Seattle; Ralph T. Montag and J. L. Salzman of Montag Stove Works, Portland; W. W. Rosebraugh, Benjamin Collins and Hubert F. Holder of W. W. Rosebraugh Company, Salem, Oregon; Alex Scales of Volume Heating & Engineering Company, Inc., Portland; Earle M. and Robert T. Mackey and Irving M. Smith of Washington Stove Works, Inc., Everett and D. S. Robinson, M. S. McDonell and E. R. Murch of Western Furnaces, Inc., Tacoma.

Dan C. Freeman of Portland, manager of the Oregon Manufacturers association, and Clancey M. Lewis of Seattle, manager of the Manufacturers' Association of Washington have been invited. Robin N. Polson, manager of the intelligence division of the Manufacturers' Association of Washington and secretary of Northwest Furnace Builders, will be in Bellingham for the session.



Pulverized Block Tin

From Moscow Sheet Metal Works, Moscow, Idaho.

Can you advise us where to buy pulverized block tin?

Ans.—National Lead Company, 900 West 18th Street, Chicago.

Metal Boats

From Redlich and Son, 118 North State Street, Jerseyville, Illinois.

Please tell us who makes metal boats.

Ans.—H. F. Thompson Boat and Pattern Works, Decorah, Iowa; Darrow Steel Boat Company, Albion, Michigan, and Mullins Body Corporation, Salem, Ohio.

"Coldwell" Lawn Mower

From George Geuss, Edina, Missouri.

I should like to know who manufactures the "Coldwell" gasoline powered lawn mowers.

Ans.—Coldwell Lawn Mower Company, 180 North Wacker Drive, Chicago.

Repairs for "Clark Jewel" Kerosene Stove

From Pritchard Sheet Metal Works, Hoquiam, Washington.

Where may we obtain repairs for Clark Jewel No. 44 Kerosene Stove?

Ans.—From the manufacturers, Geo. M. Clark and Company, Division American Stove Company, 179 N. Michigan Avenue, Chicago.

"Acme Special" Lawn Mower

From Charles W. Johnson, Sheffield, Illinois.

Can you tell me who makes the "Acme Special" lawn mower?

Ans.—As far as we know, this mower is no longer being made. However, upon receipt of description of part desired, it may be had from The Surty Manufacturing Company, 4139 West Kinzie Street, Chicago.

Address of Swartout Company

From The Thornwood Sheet Metal Works, Thornwood, New York.

We should like to know where the Swartout Ventilating Company is located.

Ans.—18511 Euclid Avenue, Cleveland, Ohio.

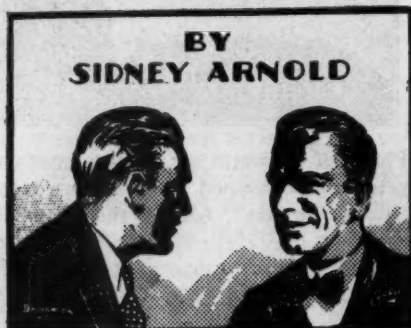
RANDOM NOTES AND SKETCHES



John O. White, President, Baltimore Local Association

Now that I have escaped successfully the trials of convention going and am once more safely ensconced in my lair in the bad, wicked city of Chicago, I want to give, with the aid of my charming better half, a few convention highlights in retrospect.

Delights of conventioning reached their peak, and the privileges of combining business with pleasure were multiplied at the famous Baltimore convention of the National Association of Sheet Metal Contractors, where everyone, from "Col." Hutchison to George Harms' young grandson, reported joys refined, and unconfined! With the hospitable Fingle family, Mrs. F. H. Baehr, in charge of the ladies' committees, and other Baltimore hosts doing their utmost in proffering happiness to the conventionites, everyone received extra enjoyment dividends.



Of course, the tired business men were there to work, so President Biersach assured us, and accomplishment ranked high; but with the entertainment offered in the evening and the delightful boat trip to Annapolis—arranged by Mr. Fingles and the Baltimore Copper Mills—no one could complain of the unrelieved strain of national business.

And the feminine contingent—how they labored at having a wonderful time! The Baltimore Ladies' Auxiliary surpassed promises and expectations in welcoming and entertaining their guests. From the



W. A. Fingles, Sr., and G. F. Stanton, Who Were Responsible for the Boat Trip

moment of receiving the silver favor at registration (and, oh, the cheese that will henceforth be served!) to the gala banquet where the world, in general, and the guests, in particular, were the better for Mr. Burruss' inspiring address (all hail Arthur Lamneck, who introduced Mr. Burruss to the industry), every feminine heart was accelerated with increasing delight.

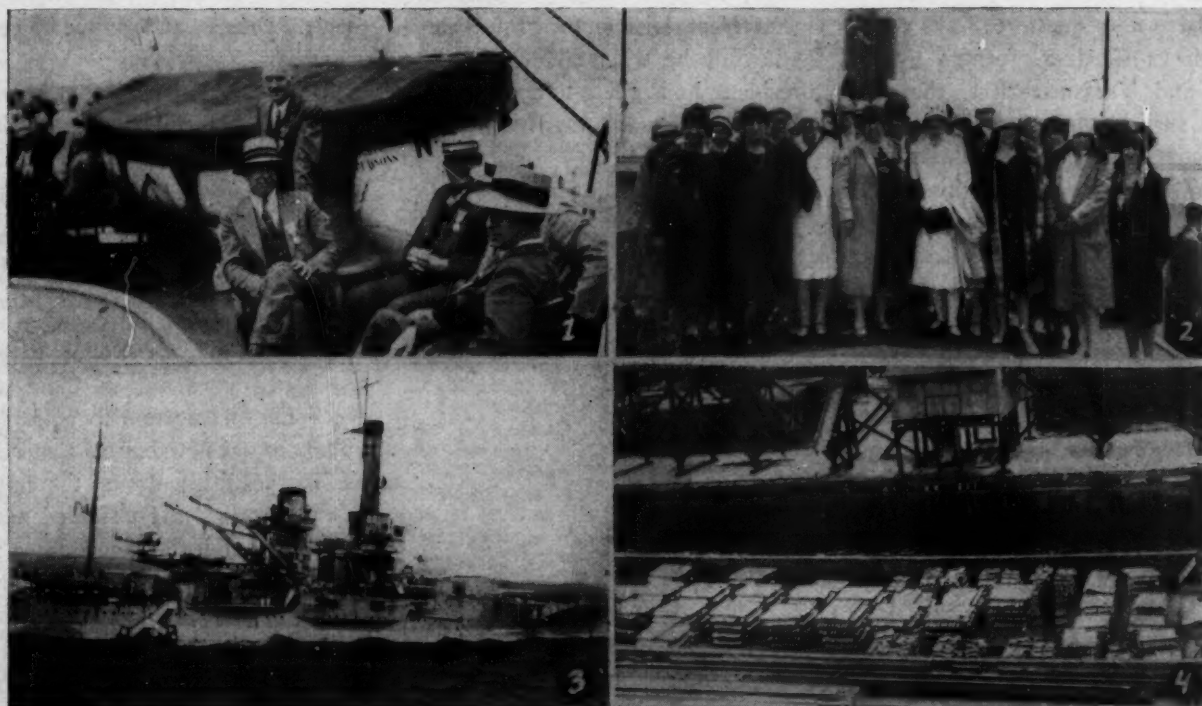
To show that the women's interests were not entirely frivolous, two meetings of the ladies' auxiliary were held, at which the beloved Mary O'Leary presided with dignity and charm.

But here a note of melancholy is heard:

"We're calling Virginia!
We're calling you from home!"



**1—Land Ho! Some of the Conventionites Getting Their First Glimpse of Uncle Sam's Naval Academy.
2—The Naval Academy Itself**



1—Reading from Left to Right: Arthur P. Lamneck, E. A. Scott, R. J. Kinser, A. S. Bray and R. L. McHale. 2—Group of Baltimore Women Snapped on the Upper Deck of the Boat. 3—One of Uncle Sam's Battle Wagons Passed on the Way to Annapolis. 4—Thousands of Tons of Copper Ingots Just Received from Foreign Countries and Ready to Be Purified and Rolled Into Sheets

The attractive Kentucky belle was missed by all, and though Dorothy Halpring ably filled the secretarial duties and generally radiated "pep," we hope Virginia won't pass us by again.

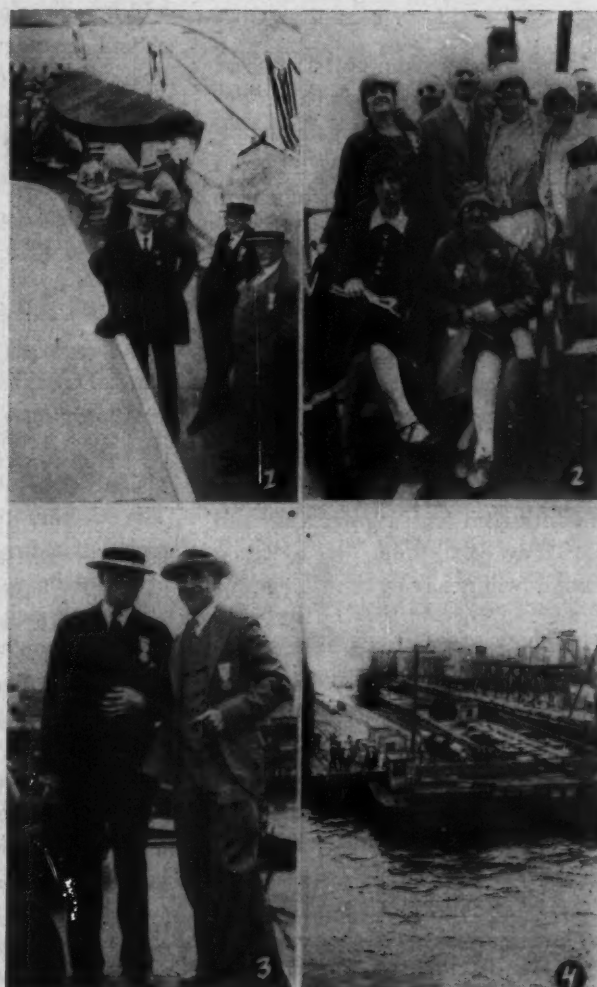
There was a miracle man in our midst, and that was none other than the popular George I. Ray, first vice-president-elect, who seemed able to be in twelve places at once, wanted everywhere, and not missing a thing. Pretty little Mrs. Ray said, "Ah, just can't evah tell wheah or when George will appeah!" Page George!

The honors in non-stop whoopee-making go, as usual, to the irrepressible Dave Farquhar, although other sheiks loom on the horizon to threaten his supremacy, with Bogenberger of Milwaukee, "Col." Hutchison of Louisville, Mr. Saunders of Cleveland, and Mr. Patterson of Baltimore running neck and neck (no necking inferred, however). We don't dare put Jack Stowell in the sheik class (we're afraid of this He man of Iron), though that's where he belongs! And, oh, how we long for the moment when this serious minded go-getter slips up and faws down hard

for some lovely lady. The "boom boom" will be heard from Balti-

more to Biddeford and from Aurora to Arkansas. Make it snappy, Jack!

1, President Paul L. Biersach, Emil P. Gunther and William E. Cotton. 2, Some of the Baltimore Women Taking Their Ease. The Lady on the Right Seated is Mrs. George I. Ray, Charlotte, N. C. The Lady on the Extreme Right Standing is Mrs. Beckwith of Baltimore, and the Others are Friends of Mrs. Ray. The T. & B. Man from New York is Standing Directly Back of Mrs. Beckwith. 3, W. A. Fingles, Jr., and G. Henry Kahl, both of Baltimore. 4, Lighter Unloading Copper Ingots.



I have a request to make of Joseph C. Gardner, former President and Treasurer-elect, that he bring his daughter-in-law to the next convention. Mrs. Ed Gardner passed through Chicago this week on her way to an important Girl Scout function. That's just one of her many activities—things can't go on without her—and we would certainly rate her tireless energy high in the Ladies' Auxiliary. Why not an Indianapolis chapter? Any time to spare, Mabelle?

With charming Irene Fingles and Mrs. F. H. Baehr holding national offices in the auxiliary, Baltimore influence is destined to continue in full bloom. We hope all the Baltimoreans come to the next convention—we don't want to miss Mrs. Beckwith's sweet smile!

One of the high points of appreciation was reached with the presentation by the Louisvilleans of roses (or was it moonshine and roses?) to President-elect Ed. Merrick in token of gratitude for real service rendered.

* * *

I had a card from Bill Laffin of the Charles Johnson Company, Peoria, who it appears is galavanting in California. Bill says: "Had breakfast with Tom Mix, luncheon with Charlie Chaplin and supper with Lon Chaney. Such is life in Hollywood. Shrine convention was some whoopee party!" Of course, knowing Bill as I do, I know that his taking meals with three of the film land stars isn't as serious as he tries to make it appear. But, anyway, I'm glad Bill and Mrs. Bill and little Bill had a good time and that they did think of us long enough while having it to send us a card.

* * *

While on the way to the Baltimore convention our business manager stopped off at Massillon to say "Hello" to the Robinson folks, and she says she never saw a happier looking bunch of young fellows in her life.

A. H. Robinson at last is thoroughly contented. He, as you may know, is the inventor of the Rob-

inson Heat Distributor, fans, etc., and while he will still continue as president, he is going to devote most of his time to his inventions, and



C. S. Bolender

says there is something especially interesting on the way.

C. S. Bolender, who has been with the company for some time, will again take over the reins as general manager, while George E. Robinson will continue as sales and advertising manager.

* * *

Here's a story that some of the inhabitants of Grand Rapids, Michigan, like to tell with delight illustrative of the financial genius of "Dick" Judd, now president of the Premier Warm Air Heater Company, Dowagiac.

When "Dick" was a little fellow, they begin, a so-called Indian doctor visited the town with a cure-all. The doctor, to get trade started, took out a bright new silver dollar and said he would auction it off.

"How much am I bid," he said, "for this bright silver dollar?"

But the crowd was cautious, silent, suspicious. No bids were made.

"How much am I bid?" shouted the Indian doctor. "Come, come, gentlemen! A nickel? A dime?"

"I bid a nickel," piped "Dick" at last.

"The dollar is yours, boy," said the doctor. "Hand up your nickel."

"Take it out of the dollar," re-

turned "Dick," "and gimme 95 cents change."

"Dick's" mother, upon hearing the story, immediately made plans to have him study the world of finance.

Tell Uncle Sam Your Vacation Plans

Commissioner of Police Russell has issued a warning to those who are going on vacation to notify the milkman and newsboy so that some passing yeggman, noting the clutter of milk bottles and unfolded newspapers around the door, may not make a mental note of the address as a desirable place to visit on some dark night in the future.

There is another phase of the absentee's forgetfulness which is sometimes serious in its consequence, and that is the failure of the vacationist to notify the post office where to send his mail, so that mail of great importance is held until he returns or is returned to writer, often with distressing results.

This is also vacation time in the post office. Under the law, letter carriers must be given fifteen days' vacation, exclusive of Sundays and holidays, but vacation or no vacation the mail must move and deliveries must be made. During the absence of the carrier, delivery is made by a substitute who is sometimes limited in experience and he may be unfamiliar with the district and those who live in it. Under the best circumstances delivery is not an easy task for the experienced carrier, and when a substitute is sent out on the district, delivery is often impossible, according to Postmaster Arthur C. Lueder, because of the failure of patrons to cooperate with the post office by providing a proper receptacle for their mail, with the name of the resident plainly shown above the box.

It is particularly desirable that the names of roomers and visitors who expect mail shall be placed over the box during the period of their stay, or they should have their mail addressed in care of the person whose name is on the box.

WHO'S WHO, WHERE!

SAN FRANCISCO, CAL.—The Lennox Furnace Co. has established headquarters at 782 35th Avenue.

The Fire Protection Products Co., 1101 16th Street, has been awarded the sheet metal work contract for the W. C. Bemiss industrial building.

The Gilfoy Cornice Works, 1234 Howard Street, has the sheet metal contract in connection with the high school group at Daly City, California.

SEATTLE, WASH.—D. E. White has sold a half interest in his garage and tin shop at 1505 8th Avenue North, to Frank Tracy.

OAKLAND, CAL.—The M. C. Henry Co., 1183 53rd Street, has the sheet metal contract for the residence of W. W. Ross.

REDWOOD CITY, CAL.—The Alexander Sheet Metal Works has been awarded the sheet metal work contract for the C. P. Waterhouse store building in San Mateo, Cal.

LOS ANGELES, CAL.—The Hodge Sheet Metal Works, 5851 S. Broadway, has the sheet metal contract for building being erected for Montgomery Ward & Co.

L. S. Wilson has been awarded the sheet metal work contract for the arts building of Loyola University.

The National Cornice Works has landed the sheet metal work contract for the tire factory of Samson Tire & Rubber Co.

CEDAR RAPIDS, IA.—Ilten & Taege, 325 4th Avenue West, has the warm air heating contract for residence of Mrs. Gladys Fordyce.

WATERLOO, IA.—Stegman & Trainer Sheet Metal & Furnace Works, 710 Jefferson Street, has been awarded contract for heating and sheet metal for residence of King E. Beall.

The Louis E. Glaza Furnace & Sheet Metal Construction Co., 811 Commercial Street, has been awarded the heating contract for residence of Royal M. Snellenberg.

GRAND ISLAND, NEB.—The Grand Island Culvert Works has heating contract for residence of Albert Heyde at that point.

SAN FRANCISCO, CAL.—The Ace Sheet Metal Works, Tehama Street, west of Fifth Street, is erecting a warehouse to be occupied by the western distributing branch of the Lennox Furnace Co. and which is directly to the rear of the plant of the Ace Sheet Metal Works, which is located at 444 Clementina Street, and will take care of the local distribution and installing of the furnaces. O. Mertz is the western manager for the Lennox company, and has an office at 782 35th Avenue.

LA GRANDE, ORE.—Frank Haines has purchased the equipment of the Jacobs Body & Fender Works, and has moved same to Weiser, Idaho.

RACINE, WIS.—The Mohr-Jones Hardware Co. has been awarded the roofing and sheet metal contract for the Junior High School at Kenosha, Wis.

ST. PAUL, MINN.—The Metropolitan Roofing & Cornice Co., 372 Rice Street, has the roofing and sheet metal work contract for office and warehouse building of Frigidaire Corporation.

SIoux FALLS, S. D.—Fred Huhn has the sheet metal work contract, and Hauenstein & Burmeister, 700 Builders' Exchange, Minneapolis, Minn., the metal

door contract for Campanile at Brookings State College, Brookings, S. D.

DAVENPORT, IA.—Adolph Kahles, 327 W. 3rd Street, has the warm air heating contract for residence of Dr. Wm. Moravek.

R. Claussen, 617 W. 2nd Street, has the warm air heating contract for residence of McInnis Bros.

WATERLOO, IA.—The Bennett Heating Co., 309 W. 4th Street, has warm air heating contracts for residences of James M. Hubbard and Joseph L. Hill.

The Waterloo Metal & Mfg. Co., corner Commercial and Miles Street, has the warm air heating contract for duplex of Oleson-Simonson Realty Co.

MUSCATINE, IA.—The Iowa Sheet Metal Products Co. has suffered the loss of two buildings by fire. Total loss about \$25,000.

TACOMA, WASH.—The Old Tacoma Sheet Metal Works, 2310 N. 30th Street, has been awarded the contract for roofing the municipal dock.

SAN FRANCISCO, CAL.—The Sheet Metal Works Union No. 104 is conducting a school of instruction for journeymen sheet metal workers every Tuesday evening at the Sheet Metal Workers' Hall. H. Broderick is the instructor.

BURLINGAME, CAL.—The Garvey Sheet Metal Works, 1206 Donnelly Street, has been awarded the sheet metal contract for Bell Sneider apartments.

SANTA MONICA, CAL.—E. P. Nittinger, 1335 3rd Street, has been awarded the sheet metal contract, and the Forrer Cornice Works, 927 W. M. Garland Bldg., Los Angeles, the hollow metal door contract for office building of Central Tower Investment Co., Ltd., Los Angeles.

LOS ANGELES, CAL.—The California Cornice Works, 1620 N. Spring Street, has the tinclad door contract for the Long Beach Professional Building, Long Beach, Cal.

The L. S. Wilson Co., 823 W. 15th Street, has been awarded the sheet metal and ventilating contract for Jacob Kalb apartment building.

WEST HOLLYWOOD, CAL.—The West Hollywood Sheet Metal Works has engaged in business at 620 Robertson Boulevard, under the management of J. J. Burns.

NEW ORLEANS, LA.—The Blattman-Weeser Sheet Metal Works, 1001 Toulouse Street, has been awarded the sheet metal work contract for \$400,000 Catholic Church.

District Sheet Metal Bloomington, Indiana, Men Will Meet June 21

Cleve Branham, District Governor of the Bloomington District, Indiana Sheet Metal and Warm Air Heating Association, has carried his plans for the district meeting, June 21st, well toward completion. He has arranged to hold the meeting at the Graham Hotel in Bloomington. The meeting time will be 6:30 p. m., which will give the delegations from Columbus, Terre Haute and Indian-

apolis an opportunity to get in on time without sacrificing too large a portion of their working day.

Alfred Grindle, architect, will make a brief talk on the subject of the relation of the architect to the subcontractor. The advisability of requesting the architects' association to recommend the separation of the sheet metal contract from the general contract and awarding it separately. On some jobs at the present time, sheet metal and roofing are thrown together, but are usually let as part of the general contract. On many public jobs, heating and ventilating, including a portion of the sheet metal work, is let separately from the general contract, sometimes including plumbing and sometimes not.

The Bloomington Chamber of Commerce are cooperating with the Bloomington committee in their endeavor to put this meeting across with a bang. They have already enlisted the cooperation of the State University and of the local industrial plants, particularly Showers Brothers, who have what is said to be the largest furniture factory in the world. Branham expects to arrange an interesting tour for those out of town visitors who are able to get into Bloomington as early as four o'clock in the afternoon. If some of the visitors signify their intention of bringing their wives, a special program will be arranged for their entertainment.

This District meeting, sponsored by the state association, is a meeting of all of the elements of the sheet metal and furnace trade including contractor members, non-members, manufacturers, jobbers and salesmen.



American Society of Heating and Ventilating Engineers semi-annual meeting, Bigwin Inn, Lake-of-Bays, Ontario, Canada, June 26 to 28, 1929. Headquarters of society 29 West 39th Street, New York City.

Backlogs Sustain High Steel Rate

Bookings Lighter but Automotive and Car Needs Promise Support Through Summer—Iron Shipments Heavy—Prices Generally Extended

NEW BUSINESS in finished steel, while seasonally high, is declining, and shipments exceed specifications by a wider margin, but producers are not scaling down their operations proportionately.

They are being carried along by the momentum of five consecutive record months and, with production rates only a few points under the peak of May, are whittling down their backlogs.

The automotive and railroad equipment industries alone provide unusual underlying strength. Some automobile manufacturers and parts makers have curtailed as much as 30 per cent, but so long as Ford and Chevrolet, accounting for 55 per cent of all automobile production, do not slacken their gait—and this is the prospect—then the summer slump in this industry will be tempered.

Thus far in 1929 the railroads have ordered 57,000 freight cars, contrasted with 29,400 in the comparable period of 1928. Steel for much of this equipment remains to be rolled, and car builders now are assured operations averaging 85 per cent well into autumn. Locomotive orders to date total 490, compared with 132 a year ago.

With unusually good railroad business already in hand, the two most important automobile makers promising to go through the summer at unusually brisk rates, and no signs that the normal summer demand for steel will be depressed, the industry shows no hesitancy in maintaining high operating rates. May's all-time ingot record was at the expense of backlogs, as evidenced by the decline of 123,596 tons in the unfilled orders of the Steel corporation May 31 after five successive monthly increases, but this interest continues to work off obligations speedily.

Although large individual ton-

nages are lacking in third quarter pig iron bookings for the week at Pittsburgh, sellers are receiving a steady run of small lots which aggregate fairly heavy.

The fact shipments on contracts are well maintained gives a steady tone to the market.

In many instances buyers have signed up with their regular sources of supply without issuing general inquiries. Although some disposition is noted on the part of larger users to defer forward commitments as long as possible, in anticipation of lower prices, quotations are steady, except in the Pittsburgh district proper where occasional freight rate concessions have resulted from competition between local and outside furnaces.

Nearly all larger melters of northern pig iron have closed for their estimated needs for third quarter at Chicago. Much of the tonnage of the smaller buyers remains to be placed. Spot buying is fair. Quotations remain steady at \$20, Chicago furnace, for base grades.

Operations at malleable foundries in this district are being reduced slightly by slower demand from the automotive industry. Shipments of pig iron generally in the first 10 days of June were slightly ahead of the comparable period in May.

Pig iron sales are small, but nearly equal the output at Birmingham. Orders for third quarter are slow. Prices are unchanged. The proposed reduction in freight rates from Birmingham to the East has not been favorably received by the railroads, it is reported. Some concessions may be authorized on rail-water shipments through Savannah.

Increased export sales of copper and a rise of 1 cent in tin in the past week are outstanding features of the nonferrous metal market. Business in domestic copper and in other metals has been quiet.

Brass and copper mill products continue quiet on new sales, but shipments still are close to capacity rates. New orders take mostly three to four weeks to run through the mills. More interest is being shown in copper wire.

Copper

The domestic market is quiet and steady at 18.00c, Connecticut, with practically only custom smelters taking new orders.

Some carlot business is being done every day, mostly for June and July shipment. Export sales in the past few days have been close to 2,000 tons daily.

Most of the buying is for June shipment and a little for July. The nonferrous scrap market is much stronger.

Zinc

Prime western continues quoted at a wide spread, with a few producers at 6.60c East St. Louis, and several asking 6.80c.

Users appear to be well covered on immediate needs. The ore market is steady at \$44 a ton. High grade zinc is steady, with shipments unusually large.

Domestic shipments of all grades of zinc in May were larger than ever before in one month. Stocks were cut to the lowest level in more than two years.

Tin

The rapid rise in prices has been due to reports from London of the possibility of a world cartel of tin producers.

Some students of the market remain skeptical as they have on former occasions. The price spread between spot and futures has widened. Good business has been done in all positions.

Lead

Business has been moderate, mostly for June shipment. Prices have been fairly steady, though there has been a little shading of the St. Louis price.

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN is the only publication containing Western Metal, Furnace Supply and Hardware prices corrected weekly

METALS

PIG IRON

Chicago Fdy.	
No. 2	\$20 00
Northern Fdy. No. 2	21 51
Lake Superior Charcoal	27 04
Malleable	20 00

FIRST QUALITY BRIGHT CHARCOAL TIN PLATES

IC	20x28 112 sheets	\$23 50
IX	20x28	25 50
IXX	20x28 56 sheets	14 50
IXXX	20x28	15 50
IXXXX	20x28	17 00

TERNE PLATES

IC	20x28, 40-lb. 112 sheets	\$26 70
IX	20x28, 40-lb. 112 sheets	29 70
IC	20x28, 25-lb. 112 sheets	22 30
IX	20x28, 25-lb. 112 sheets	25 30
IC	20x28, 20-lb. 112 sheets	20 30
IV	20x28, 20-lb. 112 sheets	23 00

"ARMCO" INGOT IRON PLATES	
No. 8 ga.—100 lbs.	\$4 15
3/16 in.—100 lbs.	4 05
1/2 in.—100 lbs.	5 25

COKE PLATES

Cokes, 80 lbs., base, 20x28	\$12 00
Cokes, 90 lbs., base, 20x28	12 30
Cokes, 100 lbs., base, 20x28	12 40
Cokes, 107 lbs., base, IC	
20x28	12 75
Cokes, 125 lbs., base, IX	
20x28	14 75
Cokes, 155 lbs., base, 2X,	
56 sheets	8 50
Cokes, 175 lbs., base 3X,	
56 sheets	9 25
Cokes, 195 lbs., base 4X,	
56 sheets	10 25
BLUE ANNEALED SHEETS	
Base 10 ga.—per 100 lbs.	\$3 25
"Armco" 10 ga.—per 100 lbs.	4 15

ONE PASS COLD ROLLED BLACK

No. 18-20	per 100 lbs.	\$3 25
No. 22	per 100 lbs.	4 00
No. 24	per 100 lbs.	4 05
No. 26	per 100 lbs.	4 15
No. 27	per 100 lbs.	4 20
No. 28	per 100 lbs.	4 30
No. 29	per 100 lbs.	4 45
No. 30	per 100 lbs.	4 55

"ARMCO" GALVANIZED

"Armco" 24	per 100 lbs.	\$6 15
------------	--------------	--------

GALVANIZED

No. 18	per 100 lbs.	\$4 40
No. 19	per 100 lbs.	4 55
No. 20	per 100 lbs.	4 70
No. 22	per 100 lbs.	4 75
No. 24	per 100 lbs.	4 90
No. 26	per 100 lbs.	5 15
No. 27	per 100 lbs.	5 25
No. 28	per 100 lbs.	5 40
No. 30	per 100 lbs.	5 50

BAR SOLDER

Warranted 50-50 per 100 lbs.	\$21 25
45-55	per 100 lbs. 20 50
45-55	per 100 lbs. 20 25
Plumbers'	per 100 lbs. 27 25

ZINC

In Slabs	\$ 7 25
----------	---------

SHEET ZINC

Cash Lots (500 lbs.)	\$11 75
Sheet Lots	12 75

BRASS

Sheets, Chicago base	24 1/2 c
Mill base	23 1/2 c
Tubing, braced, Chicago base	21 1/2 c
Mill base	20 1/2 c
Tubing, seamless, Chicago base	29 1/2 c
Mill base	28 1/2 c
Wire, Chicago base	24 1/2 c
Mill base	23 1/2 c
Rods, Chicago base	22 1/2 c
Mill base	21 1/2 c

COPPER

Sheets, Chicago base	27 1/2 c
Mill base	26 1/2 c
Tubing, seamless, Chicago base	30 1/2 c
Mill base	29 1/2 c
Wire, plain rd., 8 B. & S. Ga.	
and heavier	25 1/2 c

LEAD

American Pig	\$7 35
Bar	8 55

TIN

Bar Tin	per 100 lbs. \$50 00
Pig Tin	per 100 lbs. 49 00

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16	6c per lb.
Roll board	7 1/2 c per lb.
Mill board 3/32 to 1/2	7 1/2 c per lb.
Corrugated Paper (250 sq. ft. to roll)	\$6 00 per roll

BRUSHES

Furnace Pipe Cleaning	
Bristle with handle each	\$0 75
Flue Cleaning	
Steel only, each	1 25

CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 45
American Seal, 10-lb. cans, net	35
American Seal, 25-lb. cans, net	2 25
Pecora	per 100 lbs. 7 50

CHIMNEY TOPS

Adams' Revolving	
4 in.	21 lbs. \$11 00
6 in.	24 lbs. 11 50
7 in.	30 lbs. 13 50
8 in.	33 lbs. 15 00
10 in.	51 lbs. 18 00
12 in.	66 lbs. 22 00
14 in.	86 lbs. 28 00

CLINKER TONGS

Each	\$1 50
------	--------

CLIPS

Damper	
No-Rivet Steel, with tail pieces, per gross	\$9 50
Rivet Steel, with tail pieces, per gross	7 50
Tail pieces, per gross	3 40

COPPER—Soldering

3 lb. and heavier	per lb. 40c
3 1/2 lb.	per lb. 45c
3 lb.	per lb. 45c
1 1/2 lb.	per lb. 55c
1 lb.	per lb. 60c

CORNICE BRAKES

Chicago Steel Bending	
No. 1 to 6B	Net

CUT-OFFS

Gal., plain, round or cor. rd.	
28 gauge	30c
28 gauge	35c

DAMPERS

Yankee Hot Air	
7 inch, doz.	\$1 00
8 inch, doz.	2 20
9 inch, doz.	2 60
10 inch, doz.	2 80
12 inch, doz.	3 50
14 inch, doz.	5 00

ADAMS No. 1 CHECK

Check and Collar Complete	2 00
8 inch, each	2 25
End Check Only	
8 inch, each	1 60
9 inch, each	1 85
Collar Only	
8 inch, each	50
9 inch, each	45

No. 2 CHECK

8 inch, each	1 00
9 inch, each	1 00
10% Disc. on Adams No. 1	
Diamond Smoke Pipe	
7 inch, doz.	\$2 00
8 inch, doz.	2 20
9 inch, doz.	4 80
10 inch, doz.	6 00

Adams' Sheet Metal

7 inch, doz.	\$1 60
8 inch, doz.	2 20
9 inch, doz.	2 60
10 inch, doz.	3 20
12 inch, doz.	3 50
14 inch, doz.	5 00

EAVES TROUGH

Galv. Crimpedge, crated	75-10%
Zinc, "Barnes"	60%

ELBOWS

Conductor Pipe	
Galv. plain or corrugated, round flat Crimp,	
28 Gauge	60%
26 Gauge	45%
24 Gauge	15%
Galv. Terne Steel	
Plain Rd. and Rd. Corr.:	
28 Ga.	60%
26 Ga.	45%
24 Ga.	15%

Square Corrugated

No. 28 Gauge	50%
26 Gauge	35%

Fortico Elbows

Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested	70 & 5%
Nested Solid	70 & 5%

Sq. Corr., A. & B. & Octagon

28 Ga.	50%
26 Ga.	35%

Fortico

1", 1 1/4", 1 1/2"	45%
--------------------	-----

Copper

16 oz., all designs	40%
---------------------	-----

Zinc

All styles	60%
------------	-----

ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue "Milcor" No. 28 Gauge.	Doz.
5-inch	\$1 15
6-inch	1 25
7-inch	1 75

Special Corrugated

5-inch	\$1 00
7-inch	1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge, Uniform Blue.	
5-inch	\$1 60
6-inch	1 75
7-inch	2 10

WOOD FACES—60% off list.

FENCE

736-6-12 1/2 (100 rods)	\$28 45
1948-6-14 1/2 (100 rods)	43 45

FILES AND RASPS

Heller's (American)	50-10%
American	60-10%
Arcade	50%
Black Diamond	50%
Eagle	50%
Great Western	50%
Kearney & Foot	50%
McClellan	50%
Nicholson	50%
Simonds	60%

FIRE POTS

Geo. W. Diener Mfg. Co.	Ma.
No. 02 Gasoline Torch, 1 qt.	\$ 15
No. 9350, Kerosene, or Gasoline Torch, 1 qt.	6 50
No. 10 Tinner's Furn. Square tank, 1 gal.	11 30
No. 15 Tinner's Furn. Round tank, 1 gal.	10 70
No. 21 Gas Soldering Furnace	8 00
No. 110 Automatic Gas Soldering Furnace	10 50

GALVANIZED WARE

Pails (Galv. after made), 10-qt.	\$3 00
Tubs (Galv. after made), No. 1	5 75
No. 2	6 50

GLASS

Single Strength, A, all brackets	85%
Single Strength, B, all brackets	47%
Double Strength, A, all brackets	85%
Double Strength, B, all brackets	87%

HANGERS

Conductor Pipe	
Milcor Perfection Wire	35%
Milcor Triplex Wire	10%
Eaves Trough	
Milcor Steel (galv. after forming) from List	50%
Milcor Salsbeck E. T. Wire, List	10%

HOOKS

Conductor	
"Direct Drive" Wrought Iron for wood or brick	15%

HUMIDIFIER

"Front-Back," Automatic	
In single lots	80%
In lots of 10 or more	50-5%
In lots of 25 or more	50-10%
Vapor pans, etc., each	50%

LIFTERS

Stove Cover	
Coppered	per gro. \$8 00
Alaska	per gro. 4 75

MAILETS

Tinners	
Hickory	per doz. \$2 25

MITRES

Galvanized steel mitras	
28 Ga.	70
26 Ga.	60-80

NAILS

Cut Steel, base	\$4 00
Wire	
Common	\$3 10
Cement Coated	3 14

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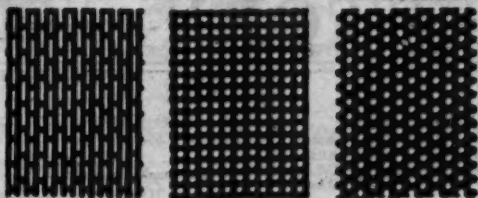
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PASTE		RIDGE ROLL	
Asbestos Dry Paste:		Galv. Plain Ridge Roll, b'd'd	75-15 59
200-lb. barrel	\$14 00	Galv. Plain Ridge Roll, crated	75-15
100-lb. barrel	7 50		
50-lb. pail	4 25		
10-lb. bag	1 00		
5-lb. bag	55		
3 1/4-lb. cartons	25		
POKERS, FURNACE		SCREWS	
Each	\$0 75	Sheet Metal	
POKERS, STOVE		7, 1/2x1/4, per gross	\$0 53
Nickel Plated, coil handles, per doz.	1 10	No. 10, 1/2x3/16, per gross	58
W'r't Steel, str't or bent, per doz.	\$0 75	No. 14, 1/2x1/4, per gross	53
PIPE		SHEARS, TINNERS' & MACHINISTS'	
Conductor		Viking	\$33 60
Cor. Rd., Plain Rd., or Sq.		Lennox Throatless	
Galvanized		No. 12	35%
Crated and nested (all gauges)	75-7 1/4%	Shear blades	10%
Crated and not nested (all gauges)	75-2 1/4%	(f. c. b. Marshalltown, Iowa)	
FURNACE PIPE		SHIELDS, ADJUSTABLE RADIATOR	
Double Wall Pipe and Fittings	50 & 10%	No. 1 "Gem" 11" to 17"	30%
Single Wall Pipe, Round		No. 2 "Gem" 14" to 24"	30%
Galvanized Pipe	50 & 10%	No. 3 "Gem" 25" to 65"	30%
Galvanized and Tin Fittings	50 & 10%		
LEAD		SHOES	
Per 100 lbs.	\$13 50	Galv. 23 Gauge, Plain or corrugated round flat crimp.	50%
STOVE PIPE		25 gauge round flat crimp.	45%
"Miler" "Titelock" Uniform Blue Stove		24 gauge round flat crimp.	15%
23 gauge, 5 inch U. C.	11 00	SNIPS, TINNERS	
23 gauge, 6 inch U. C.	12 00	Clover Leaf	40 & 10%
23 gauge, 7 inch U. C.	14 00	National	40 & 10%
30 gauge, 5 inch U. C.	10 35	Star	50%
30 gauge, 6 inch U. C.	11 00	Miler	Net
30 gauge, 7 inch U. C.	13 00	SQUARES	
T-Joint Made up		Steel and Iron	Net
6-inch, 23 ga. per doz.	\$ 40	(Add for bluing \$3 per doz. net)	
All Size		Mitre	Net
No. 11, all styles	60%	Try	Net
PULLEYS		Try and Bevel	Net
Furnace Tackle	per doz. \$0 85	Try and Mitre	Net
Furnace Screw (enameled)	per doz. 75	Fox's	per doz. \$6 00
PUTTY		Winterbottom's	10%
Commercial Putty, 100-lb. Kits	\$3 50	STOPPERS, FLUE	
QUADRANTS		Common	per doz. \$1 10
Malleable Iron Damper	10%	Gem, No. 1	per doz. 1 10
REDUCERS—Oval Stove Pipe		Gem, flat, No. 3	per doz. 1 00
Per Doz.		VENTILATORS	
7-4, 23-gauge, 1 doz. in carton	\$2 00	Standard	30 to 40%
REGISTERS AND BORDERS		WIRE	
Baseboard, Floor and Wall		Black annealed wire, No. 9, per 100 lbs.	\$3 30
Cast Iron	20%	Galvanized barb wire, per 100 lbs.	\$ 30
Steel and Semi-Steel	33 1/4%	Cattle Wire—galvanized catch weight spool, per 100 lbs.	\$ 30
Baseboard, 1 piece	33 1/4-20%	Galvanized Plain Wire, No. 9, per 100 lbs.	1 25
Baseboard, 2 piece	33 1/4%		
Wall	33 1/4%		
Adjustable Ceiling Ventilators	33 1/4%		
Register Faces—Cast and Steel			
Japanned, Bronzed and Plated, 4x6 to 14x14	33 1/4%		
Large Register Faces—Cast, 14x14 to 38x42	50%		
Large Register Faces—Steel, 14x14 to 38x42	60%		
Ventilating Register			
Per gross	\$ 00		
Small, per pair	30		
Large, per pair	50		

PERFORATED METALS



All Sizes and Shapes of Holes
In Steel, Zinc, Brass, Copper, Tinplate, etc.
For All Screening, Ventilating and Draining
EVERYTHING IN PERFORATING METAL

THE HARRINGTON & KING PERFORATING CO.

5649 FILLMORE ST.-CHICAGO ILL. U. S. A.
NEW YORK OFFICE: 114 LIBERTY ST.

The NEW IMPROVED "STANDARD"

ROTABLE VENTILATOR

Patented



THIS favorite ventilator
has been further im-
proved to insure—

Now made of **ARMCO IRON** Greater Durability
Quieter Operation
Greater Efficiency
Better Balance

The New Cone-top Suspension,
new Bronze Guide Bushings, and Cross Braced Skirt are the new features.
Let us tell you in detail all about this better ventilator.

Write for special circular and prices today

"Standard" Ventilator and Chimney Cap—
Most Efficient Combination on the market.

STANDARD VENTILATOR CO., LEWISBURG, PA.

THIS MEANS SERVICE

B.B. LINE OF SHEET METAL SUPPLIES

CARRIED IN STOCK BY YOUR NEAREST JOBBER
INSURING PROMPT SHIPMENT OF QUALITY MATERIAL.

EVERY ITEM OF THE B. B. LINE IN A CLASS BY ITSELF. LOOK FOR THE B. B.

B. B. Conductor Hooks and Gutter Hangers, "SHUR-LOCK" Conductor Pipe, "E-Z Fit" Eaves Trough, "Quaker City" Mitres, Ends, Caps and Outlets. Other items in our No. 10 Catalog.

BERGER BROS. CO.

229 TO 237 ARCH ST.

PHILADELPHIA

CHICAGO STEEL SLITTING SHEAR

LIGHT—POWERFUL DURABLE

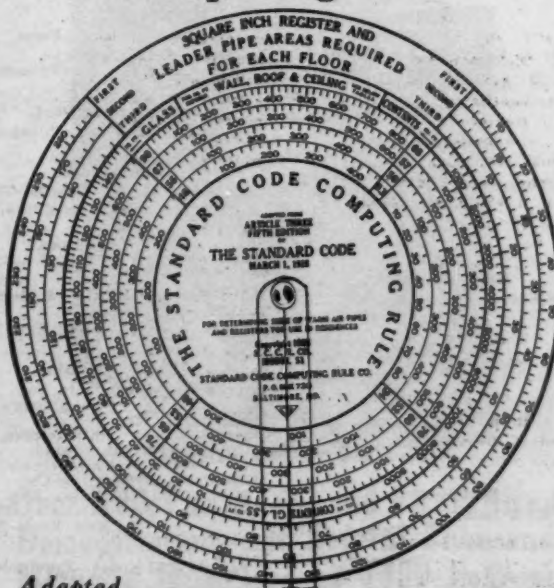


Capacity 10 gauge sheets
Any Length or Width
Flat Bars 3/16x2"
Weight 22 pounds
Price \$15.00 Net
F. O. B. Chicago

Made of pressed steel and equipped with hold-down. Blades of highest grade crucible steel. Most indispensable high grade shears made. Equal to other shears selling at over twice the price. **ORDER YOURS TODAY.**

DREIS & KRUMP MFG. CO., 7404 Loomis St., Chicago

The STANDARD CODE Computing Rule



Adapted from Article Three 5th Edition

of the STANDARD CODE

MARCH 1, 1928

Simple to Operate

THE Computing Rule is not a novelty, but, a well designed mathematical device, for figuring leader pipe and register areas for warm air heating systems. It has proven its accuracy in estimating and has passed the experimental stage. It is operated similar to an Engineer's slide rule.

The complete instructions are easily understood. You can learn to operate the Rule in less than one hour.

Results can be had without a single Division, Multiplication or Addition problem, as required in Article Three of the Standard Code. Not a chance for a mathematical error.

"Remember, you do not have to refer to a lot of loose parts or awkward tables."

Simplifies accurate estimating.

Handy Pocket Size

RULES are 5½ inches in diameter—1/8 inch thick. Has an upper and lower revolving disc with a hairline indicating arm.

It is made of extra heavy and specially prepared celluloid, which reduces shrinkage and warping to a minimum. It is washable and unbreakable.

Can be carried comfortably in your pocket.

Here Is What The Computing Rule Will Determine:

- 1 The warm air pipe and register areas for First, Second and Third floor rooms.
- 2 The areas necessary for 70° inside temperature when the outside temperatures are ZERO, 10, 20 and 30 degrees ABOVE or BELOW zero.
- 3 The areas from the Contents, Glass, Wall, Roof and Ceiling. The factors as covered in Table "A" are represented in accurate form.
- 4 The areas for rooms having One, One and One-half and Two air changes per hour.
- 5 The Unusual Exposure requirements as the 10% for East and West and 15% for Northeast, North and Northwest rooms.

"Absolute Correct Results"

Price, \$3.00—Postpaid

AMERICAN ARTISAN

139 North Clark Street
CHICAGO, ILLINOIS

BUYERS' DIRECTORY

Air Cleaners.
Meyer & Bro. Co., F., Peoria, Ill.

Asbestos Paper.
Sani-Mountain Co., Chicago, Ill.

Asbestos Liquid.
B. & F. Mfg. Co.,
Des Moines, Iowa

Ball Joints.
Alfred C. Goethal Co.,
Milwaukee, Wis.

Benchies—Steel.
Maplewood Machinery Co.,
Chicago, Ill.

Blast Gates.
Alfred C. Goethal Co.,
Milwaukee, Wis.

Blow Pipe Fittings.
Alfred C. Goethal Co.,
Milwaukee, Wis.

Boils—Stove.
The Kirk-Latty Co.,
Cleveland, Ohio
Lamson & Sessions Co.,
Cleveland, Ohio
Ryerson & Son, Inc., Jos. T.,
Chgo., N. Y., St. L., Det., Cleve.

Brakes—Bending.
Dreis & Krump Mfg. Co.,
Chicago, Ill.
Ryerson & Son, Inc., Jos. T.,
Chgo., N. Y., St. L., Det., Cleve.

Brakes—Cornice.
Dreis & Krump Mfg. Co.,
Chicago, Ill.

Brass and Copper.
American Brass Co.,
Waterbury, Conn.
Copper & Brass Research As-
sociation, New York

Cans—Garbage.
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio

Castings—Malleable.
Fanner Mfg. Co., Cleveland, Ohio

Ceilings—Metal.
Eller Manufacturing Co.,
Canton, Ohio
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City

Chimneys.
Fanner Mfg. Co., Cleveland, Ohio

Chimney Tops.
Standard Ventilator Co.,
Lewisburg, Pa.

Cleaners—Vacuum.
Brillion Furnace Co., Brillion, Wis.
Gottschalk Heating Co.,
Covington, Ky.
National Super Service Co.,
Toledo, Ohio

Copper.
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(Continued on page 144)



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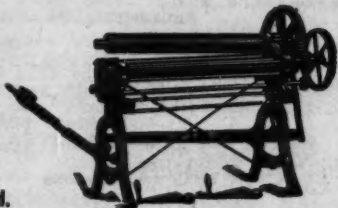
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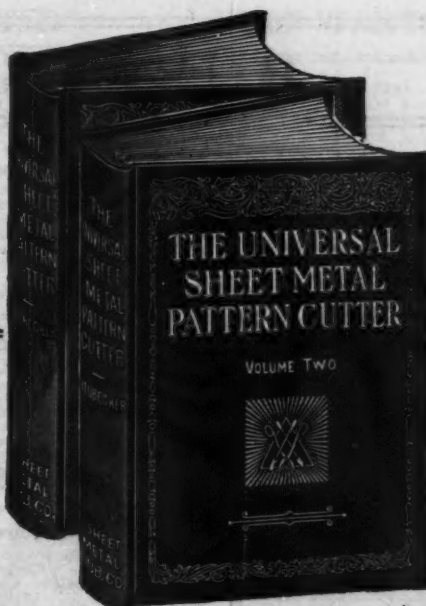
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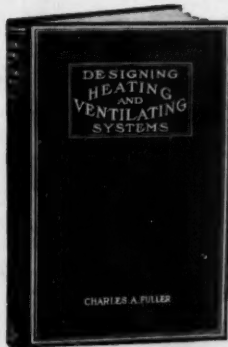


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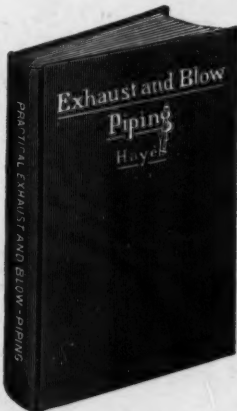
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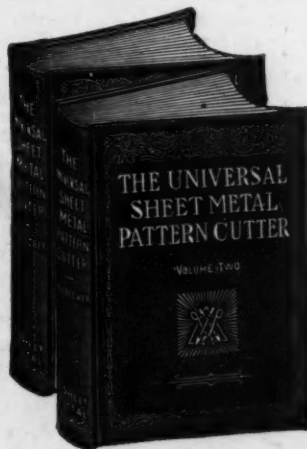
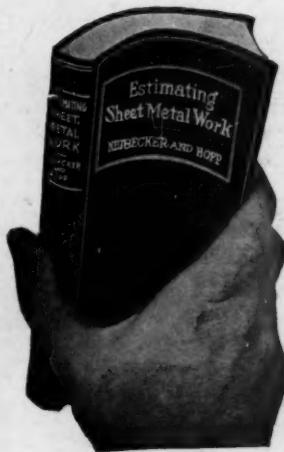
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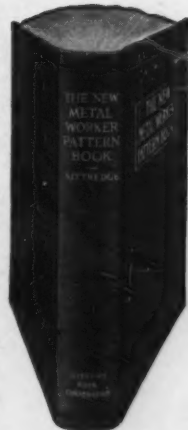
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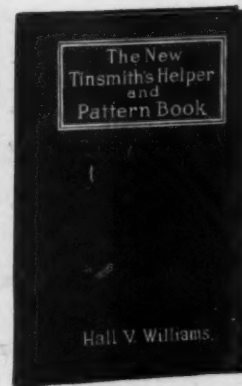
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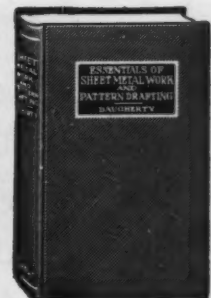
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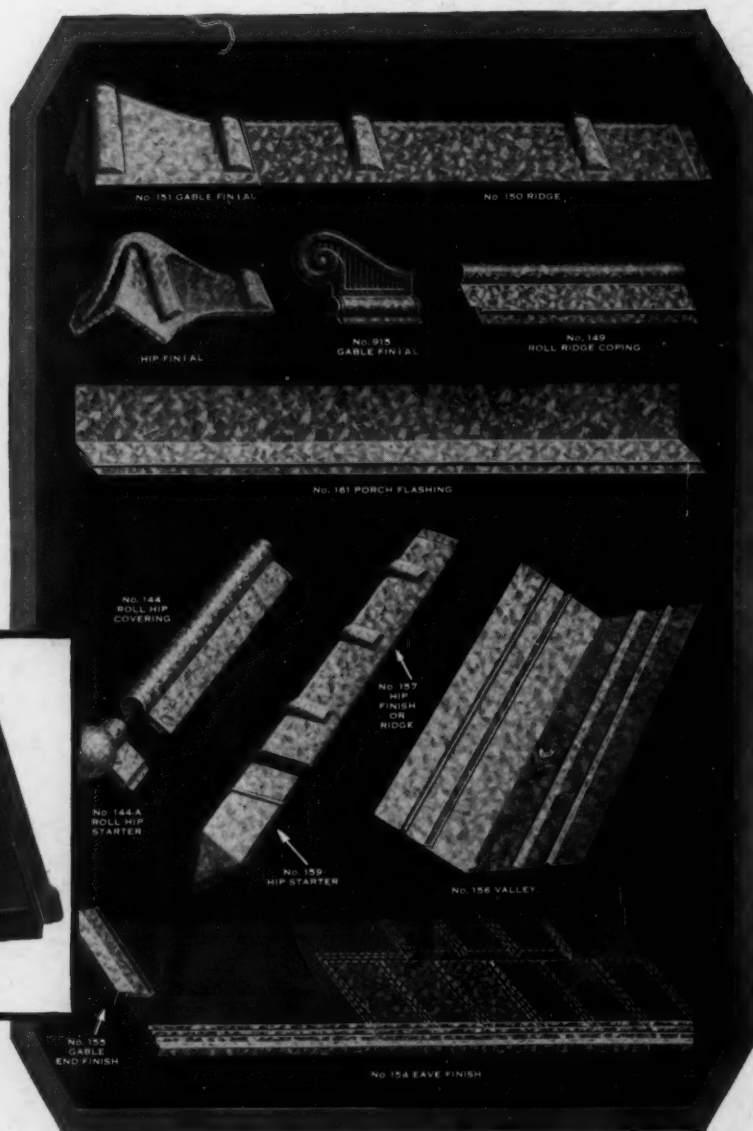
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